Montgomery College Catalog

Volume 64 • 2014–2015

Students who plan to graduate from Montgomery College should select one catalog during their enrollment and follow the curriculum outlined in that catalog, provided they graduate within seven years of the catalog chosen.

Montgomery College's online catalog, located on the Official Policies and Documents page of the College's website at *www.montgomerycollege.edu/catalog*, is the official version of this document. In the case of conflicts between the printed catalog or other versions of the catalog and the Official Policies and Documents page of the website, the material on the online page shall control.

240-567-5000

A Message from the President

Welcome to the Montgomery College family! A Montgomery College education is about liberating your hopes and dreams and turning them into tangible goals. By arming yourself with an education, you make a commitment to empower yourself and, in turn, your whole family. This is not, and will not be, a solo venture. Your successes, and your challenges, are shared by so many around you: your family, your friends, your classmates, your professors, and your Montgomery County community. By making a difference in your own life, you are enriching the lives of so many people around you, some of whom you may not even know yet.

You may feel overwhelmed or maybe even intimidated by what lies ahead. That is completely natural. I remember my first day at college like it was yesterday—it is hard to believe the actual number of yesterdays since then! As the first in my family to attend college, and many miles away from family or friends, I felt a mixture of emotions from excitement and anxiety to freedom and homesickness. But it was early on in my college experience that I began to learn who I was, who I wanted to be, and who I could be with the support and mentorship of my new community. You could say I have never left college! I turned my love of reading and of learning into a bachelor's degree, and then a master's degree, and finally a PhD. And here I am today—president of Montgomery College.

You are one step closer to changing your life. If you ever start to doubt yourself, I encourage you to take a breath, turn to a supportive person, such as a professor, counselor, friend, or parent. We stand ready to help you reach your potential, whatever goal you set for yourself. Whether you are the first member in your family to attend college, or one of a long line of college graduates, you are in the right place to make your own mark on the world. Whether you are here to receive a certificate in a critical trade, earn an associate's degree, transfer to a university to earn a bachelor's degree, or pursue your own unique educational goal, you are in the right place to actualize your dreams. Whether you are an adult learner seeking to expand your mind, or a recent high school graduate trying to figure out what career to pursue, you are in the right place to carve your own future. No matter who you are, you are forever part of a phenomenal and very special family: Montgomery College.

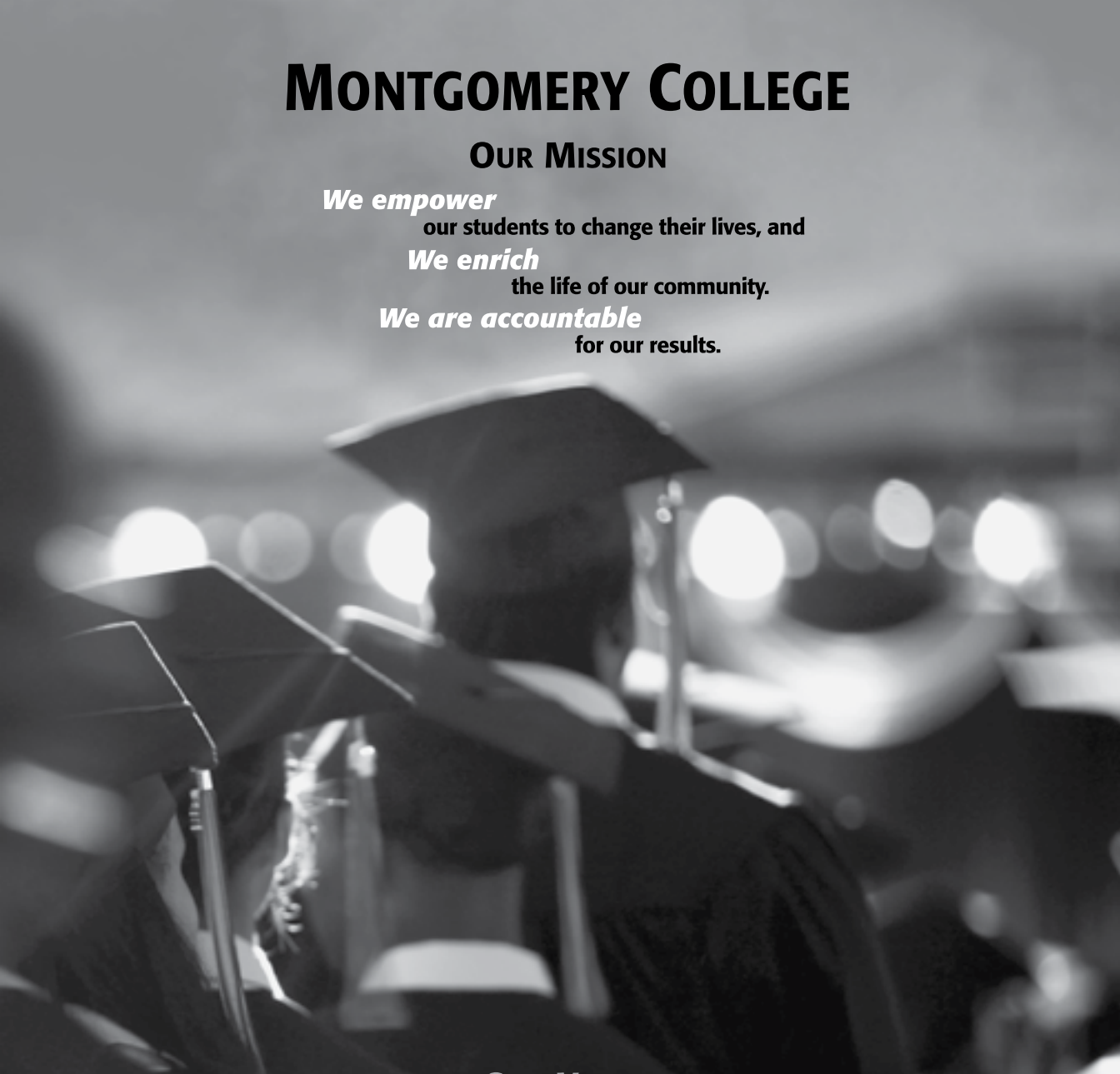
Welcome!

DeRionne P. Pollard, PhD
President
president@montgomerycollege.edu

Montgomery College

Our Mission

We empower
our students to change their lives, and
We enrich
the life of our community.
We are accountable
for our results.



Our Vision

With a sense of urgency for the future, Montgomery College will be a national model of educational excellence, opportunity, and student success. Our organization will be characterized by agility and relevance as it meets the dynamic challenges facing our students and community.

Our Values

excellence | integrity | innovation | diversity | stewardship | sustainability

Adopted by the Montgomery College Board of Trustees, June 20, 2011

Student Success Model

Student success is accomplished through a collaborative effort to achieve learning that actively engages students, faculty, and staff. Student success can be measured by identifying and clarifying student goals and expectations upon entry, assessing student progress and experiences through their courses, and evaluating student outcomes at the time of exit. Montgomery College fulfills its implicit contract with the larger community when student success is achieved.

Student Success Credo

We believe student success is accomplished when students

- read, write, and speak at the college level;
- use mathematics tools and concepts at the college level;
- use information resources, including developing technology, to support continued learning;
- are positive, motivated learners who accept responsibility for their success;
- are self-confident, independent, and active learners with critical thinking skills enabling lifelong learning;
- are tolerant and flexible, and aware of the interdependence of modern society.

We believe student success is facilitated through

- assessing student academic skills and placing students in appropriate courses;
- counseling and advising students to establish focused and realistic educational, career, and personal goals;
- assessing ongoing development, clarification, and refinement of student goals throughout the educational process;
- teaching students with challenging, but nurturing and encouraging, instructional methods;
- providing effective and appropriate learning support programs and services.

We believe student success is enabled when faculty and staff are committed to

- providing a positive, welcoming climate that reflects an ethical, caring college community;
- taking a personal interest by encouraging, assisting, and respecting the individual potential in each student;
- setting personal performance expectations that reflect their commitment to student success.

We believe student success is further ensured when the College

- is responsive to the community's needs and sets goals to meet them;
- clearly and effectively communicates information internally and externally;
- provides a physical environment conducive to learning and the development of a sense of community among students, faculty, and staff;
- offers students a comprehensive co-curricular program;
- is responsive to the needs of faculty and staff directly involved in the learning process;
- develops plans, allocates resources, and assigns administrative time to activities contributing to student success;
- provides professional development opportunities for faculty and staff that enhance the learning environment;
- maintains a reward system that recognizes faculty and staff contributions to students and their learning;
- regularly evaluates (with student input) all aspects of the College instruction, as well as support and administrative offices, and uses the data to improve such aspects.

Directory

Some frequently used addresses and phone numbers for the College are listed below. You can also find contact information for College departments and programs at *www.montgomerycollege.edu*.

Central Services
900 Hungerford Drive
Rockville, MD 20850
240-567-5000

Germantown Campus
20200 Observation Drive
Germantown, MD 20876
240-567-7700
Security: 240-567-7777

Rockville Campus
51 Mannakee Street
Rockville, MD 20850
240-567-5000
Security: 240-567-5111

Takoma Park/Silver Spring Campus (TP/SS)
7600 Takoma Avenue
Takoma Park, MD 20912
240-567-1300
Security: 240-567-1600

Admissions and Records
Germantown: 240-567-7823
Rockville: 240-567-5000
TP/SS: 240-567-1501

Alumni
Office of Alumni Affairs
240-567-5378

Employment
Office of Human Resources
240-567-5353

Equity and Diversity
240-567-5276

Financial Aid and On-Campus Student Employment
240-567-5100

Library
Germantown: 240-567-7853
Rockville: 240-567-7130
TP/SS: 240-567-1536

Public Relations
Office of Communications
240-567-4022

School of Art + Design at Montgomery College
240-567-5821

Transcripts
Admissions and Records Office
Germantown: 240-567-7821
Rockville: 240-567-5000
TP/SS: 240-567-1501

Tuition and Fees
Admissions and Records Office
Germantown: 240-567-7823
Rockville: 240-567-5000
TP/SS: 240-567-1501

Use of College Facilities
Office of Facilities
Germantown: 240-567-7882
Rockville: 240-567-5016
TP/SS: 240-567-1564

Veterans Affairs Office
240-567-5033

Workforce Development & Continuing Education
51 Mannakee Street
Rockville, MD 20850
240-567-5188

Collegewide or Campus Closing, Delayed Opening, or Emergency

Montgomery College will always operate on its regular schedule unless otherwise announced. Changes to the college's operational status will be communicated in a number of ways. Additional information is on page 16.

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College Calendar

Academic Year 2014–15

Please visit www.montgomerycollege.edu/dates for detailed semester calendars.

Summer Sessions 2014

Monday, May 26	Official beginning of summer sessions for faculty
Monday, May 26	Memorial Day; College closed
Tuesday, May 27	Summer I session classes begin
Monday, June 16	Midsummer session classes begin
Friday, July 4	Independence Day; College closed
Monday, July 7	Summer II session classes begin
Friday, August 15	Official end of summer sessions

Fall Semester 2014

Monday, August 18	Official beginning of Academic Year; Faculty return for professional days Various offices closed for fall opening meeting
Monday, August 25	Fall semester classes begin
Monday, September 1	Labor Day; College closed
Saturday–Sunday, September 6–7	Fall semester weekend classes begin
Wednesday, November 26	No classes; non-instructional duty day
Thursday–Sunday, November 27–30	Thanksgiving Holiday; College closed
Monday–Sunday, December 8–14	Final week of classes—exams
Monday–Tuesday, December 15–23	Non-instructional duty days
Wednesday–Friday, December 24–January 2	Winter Holiday; College closed
Friday, January 2	Official end of fall semester

College Calendar

Academic Year 2014–15

Please visit www.montgomerycollege.edu/dates for detailed semester calendars.

Winter Session 2015

Monday, January 5	Winter session classes begin
Friday, January 16	Winter session classes end

Spring Semester 2015

Monday, January 5	Official beginning of spring semester
Monday, January 19	Martin Luther King, Jr. Day; College closed
Thursday, January 20	Faculty return for professional days Various offices closed for spring opening meeting
Monday, January 26	Spring semester classes begin
Saturday–Sunday **January 31–February 1**	Spring semester weekend classes begin
Monday–Sunday, March 16–22	Spring recess for faculty and students Spring Break; College closed
Monday–Sunday, May 11–17	Final week of classes—exams
Monday–Friday, May 18–22	Non-instructional duty days; Commencement
Friday, May 22	Official end of spring semester and academic year

Summer Sessions 2015

Monday, May 25	Official beginning of summer sessions for faculty
Monday, May 25	Memorial Day; College closed
Tuesday, May 26	Summer I session classes begin
Monday, June 22	Midsummer session classes begin
Friday, July 3	Independence Day Observed; College closed
Monday, July 6	Summer II session classes begin
Friday, August 21	Official end of summer sessions

Notice

In keeping with the College's educational mission, the educational policies and procedures are continually being reviewed and changed. The statements and provisions in this catalog are subject to change at the discretion of the College and without notice. This catalog should not be construed as constituting a contract, express or implied, between the College and any person. The College may issue supplements and make revisions at its sole discretion. The official version of the catalog may be found on the Official Policies and Documents page of the College's website: *www.montgomerycollege.edu/verified.*

Readers should use this catalog solely as a reference document, recognizing that it is not always the most authoritative or complete source of information. Students are responsible for keeping informed of official policies and meeting all relevant requirements and should confirm the current status of statements and provisions before registering. Where there is a conflict between any official documents and any summary of such documents which may appear in this catalog, the provisions of the official document shall apply.

The College reserves the right in its sole discretion to change any of the policies and procedures of the College at any time, including but not limited to those related to admission, instruction, and graduation. This also includes without limitation the right of the College to make changes of any nature in the College's academic program, courses, curricula, schedule, calendar, tuition, fees, academic policies, and other policies and procedures affecting students, whenever the College in its sole discretion deems it desirable to do so. The College also reserves the right to shift programs, departments, or courses from one to another of its campuses. The foregoing changes may include, without limitation, the elimination of programs, departments, or courses; the modification of the content of any of the foregoing; the rescheduling of classes, with or without extending the announced academic term; and the cancellation of scheduled classes or other academic activities. If such changes are deemed desirable by the College, the College may in its sole discretion require or afford such alternatives for scheduled classes or other notification that the College deems reasonably practical under the circumstances. All such changes are effective at such times as the College determines and, unless otherwise stated in writing, will apply not only to prospective students but also to those who already are enrolled in the College. Enrollment of all students is subject to these conditions.

Payment of tuition in whole or part or attendance at a class shall constitute a student's acceptance of the College's rights as set forth above.

Montgomery College Is Open to All

With students enrolled from every continent and from more than 179 different countries around the globe, Montgomery College is a community of diverse students, faculty, staff, and alumni that are citizens of the world. As a community open to all, the College embraces its extraordinary diversity and it is committed to creating learning environments and opportunities that prepare our students to contribute to and participate in a global society and marketplace.

At Montgomery College, we demonstrate our commitment to diversity in several ways, which includes ensuring an environment where all persons are provided opportunities for employment and/or participation in academic programs and other College activities. The Montgomery College Board of Trustees has established policies to assure that College maintains educational and employment environments free from ethnic, cultural, and racial hostility, violence, or harassment. It is the policy and practice of the College to prohibit discrimination against an individual with a disability or on the basis of age, citizenship status, color, covered veteran status, gender identity, genetic information, marital status, national origin, race, religion, sex and sexual orientation. This policy is consistent with Title VI of the Civil Rights Act of 1964; Title IX of the Educational Amendments Act of 1972; Section 504 of the 1973 Rehabilitation Act, as amended; the Americans with Disabilities Act; and other applicable laws and regulations. Inquiries regarding compliance with these laws may be directed to the chief equity and diversity officer, 900 Hungerford Drive, Rockville, MD 20850, 240-567-5276, *www.montgomerycollege.edu/departments/oed* or to the director of the Office for Civil Rights, Department of Education, Washington, DC 20201. Under provisions of the Americans with Disabilities Act, this material is available in alternative formats by contacting the Disability Support Services Office at 240-567-5058 for the deaf and hard of hearing.

Student Liability Statement

At the time of enrollment, each student agrees to assume the personal risks and liabilities entailed in any course requirement. The student releases and holds harmless Montgomery College, its trustees, and employees from any injury sustained through his/her actions or the actions of other students enrolled in the course.

About Montgomery College

"We empower our students to change their lives."

—Montgomery College Mission Statement

Montgomery College has been changing lives in Montgomery County for more than 60 years.

Founded in 1946, Montgomery College began as an evening college at Bethesda-Chevy Chase High School, serving an initial student body of just 186 students.

By 1950, the College acquired the buildings and land previously occupied by the Bliss Electrical School. This Takoma Park location became the College's first campus. The Rockville Campus opened in 1965, and the Germantown Campus opened in 1978.

Today, the College is a multi-campus institution that serves nearly 60,000 students annually, through a combination of credit and noncredit continuing education programs.

Chartered by the state of Maryland and governed by a 10-member Board of Trustees, Montgomery College is widely recognized for the quality and scope of its academic programs in liberal arts, humanities, sciences, business, and technologies.

Campuses are located in Germantown, Rockville, and Takoma Park/Silver Spring, complemented by Workforce Development & Continuing Education centers and other off-campus sites throughout Montgomery County.

More than 100 degree and certificate programs prepare students to earn an associate's degree, transfer to a four-year college or university, enter the job market, upgrade career skills, complete an apprenticeship, or enhance life through enrichment experiences.

A highly accomplished and innovative faculty provide individualized instruction and a supportive learning environment. Affordable tuition and various extracurricular activities—athletic programs, performing arts, student clubs and multicultural organizations, student government—create a complete college experience for the county's culturally diverse student population.

Courses and student services are provided year-round for day, evening, and weekend students.

College Philosophy

The College is an open-access, public education institution dedicated to academic excellence and committed to student success. The College offers a wide range of postsecondary academic programs, career training, and lifelong learning opportunities at moderate cost to residents, businesses, and other organizations within Montgomery County. The College provides an enriching and

comprehensive learning experience for students, faculty, staff, and community members who enhance the College with a diversity of ethnicities, cultures, ages, and experiences. This diversity offers opportunities for students to appreciate individual differences and to communicate ideas. As an educational resource center, the College acknowledges its responsibility and participates actively with public and private agencies to search for solutions to community problems.

College Program Commitments

The vision of academics at Montgomery College is a natural expansion of our student-centered mission of caring, commitment to quality, and service to community that holds us accountable for key results centered on learning. This vision incorporates clear priorities and the challenges of the future: continued access, retention, achievement, and collaborative learning. These priorities are achieved within a framework of service to the community and continued learning and professional development.

In keeping with its philosophy, policies, and purposes, the College offers the following high-quality educational opportunities:

- transfer curricula for students wishing to transfer to upper-division degree studies at four-year colleges and universities;
- technical curricula for students wishing to prepare for immediate employment;
- a broad-based general education curriculum upon which students with undecided objectives can build;
- credit and noncredit courses that may be used for employment, re-employment, and retraining and for exploring interests in professional and technical fields;
- a continuing education program that extends the resources of the College into the community;
- forums, lectures, short courses, concerts, dramatic productions, art exhibits, athletics, and other activities meant to add balance to the total instructional program of the College;
- academically, vocationally, and personally oriented counseling services;
- a program designed to identify and help remedy students' academic deficiencies;
- an early placement program for qualified high school seniors wishing to supplement their secondary school courses and/or accelerate their college studies;
- an honors program for students of outstanding ability; and
- an extensive summer program for current students, for undergraduates from other institutions, and for high school graduates who wish to begin their college studies.

Degrees, Certificates, and Letters of Recognition

The Maryland Higher Education Commission has authorized the College to confer the associate of arts, associate of science, associate of applied science, associate of arts in teaching, and associate of fine arts degrees upon its graduates. The College awards diplomas, certificates, and letters of recognition. Specific requirements are listed in the Curricula section.

Academic Recognition and Memberships

As a public institution, the College is legally accountable to the state of Maryland and Montgomery County. At the state level, the College reports to the Maryland Higher Education Commission (MHEC). MHEC establishes minimum requirements for associate degree–granting institutions and establishes general policies for the operation of community colleges.

Middle States Association Accreditation

The College was first accredited on April 28, 1950, after an evaluation by a committee representing the Commission on Higher Education of the Middle States Association (an institutional accrediting agency recognized by the U.S. Secretary of Education and the Commission on Recognition of Postsecondary Accreditation). It

has remained on the accredited list ever since. For more information on accreditation, contact:

Middle States Commission
on Higher Education
3624 Market Street
Philadelphia, PA 19104
267-284-5000
www.msche.org

Other Accreditation

The College holds accreditation from the state of Maryland and numerous academic and professional organizations. Examples of accrediting organizations for specific curricula are as follows:

Diagnostic Medical Sonography
Commission on Accreditation of Allied Health Education Programs

Health Information Management
Commission on Accreditation for Health Informatics and Information Management Education

Interior Design
National Kitchen and Bath Association

Music
National Association of Schools of Music

Nursing
National League for Nursing Accrediting Commission

Physical Therapist Assistant
Commission on Accreditation in Physical Therapy Education

Polysomnography Technology
Commission on Accreditation of Allied Health Education Programs

Radiologic Technology
Joint Review Committee on Education in Radiologic Technology

Surgical Technology
Commission on Accreditation of Allied Health Education Programs

Alumni

The Montgomery College Alumni Association is a free membership organization of former students, graduates, and College retirees committed to enriching lives and producing meaningful opportunities for alumni, students, and the College community. A volunteer board of governors, operating as part of the Montgomery College Foundation, directs the activities of the Alumni Association. The board includes the association's elected officers, chapter representatives, and retired employees.

The Alumni Association has also embraced former students of the Maryland College of Art and Design (now the School of Art + Design at MC) and members of the Bliss Electrical Society (graduates of the Bliss Electrical School as well as College alumni from the electronics and computer technician programs). Any group of at least 10 persons is eligible to form a student/alumni academic or special interest chapter; call the Alumni Association at 240-567-5378 for more information.

The Alumni Association awards several scholarships each year, including two for the son, daughter, mother, or father of a College alumnus/alumna. The Socrates and Anne Koutsoutis Statue of Liberty Scholarship for a first-year student, partial or full scholarships for Summer Dinner Theatre students, and the Louis D. Bliss Memorial Scholarship for electrical engineering or computer science majors, are also available. Other Association scholarships may be available from year to year.

The Alumni Association regularly honors outstanding and high-achieving alumni. The Milton F. Clogg Outstanding Alumni Achievement Awards are presented at the Alumni Awards Ceremony, where former athletes are inducted into the Athletic Hall of Fame. Nominations are accepted from current and former students, faculty, and staff. For scholarship applications, award nomination forms, and information on Alumni Association membership benefits, please call 240-567-5378 or visit the College website (*www.montgomerycollege.edu)* and click on "Alumni & Friends."

College Policies

All official College policies and procedures are posted on our website at *www.montgomerycollege.edu/pnp.* Policies detailed in this official document include Drug and Alcohol Abuse Prevention, Hate/Violence Activity, Equal Employment Opportunity and Nondiscrimination, and Sexual Harassment.

Closing, Delayed Opening, or Emergency

Montgomery College will always operate on its regular schedule unless otherwise announced. Depending on the nature of the incident, notifications of emergencies and changes to the College's operational status will be communicated through one or more of the following means:

- College emergency responders: Security Officers, Campus Response and/or Support Teams
- Montgomery College ALERT. Registered users receive text and e-mail messages. Registration information at *www.montgomerycollege.edu/emergency*
- Montgomery College Emergency Desktop Notification. Scrolling messages are broadcast on College computers
- Montgomery College website at *www.montgomerycollege.edu*
- MyMC website at *https://mymcprod.montgomerycollege.edu/cp/home/displaylogin.*
- MyMC student e-mail system
- Montgomery College employee voice mail. From off-site, dial 240-567-1701
- Montgomery College employee e-mail. From off-site, *http://mcmail.montgomerycollege.edu*
- Montgomery College main phone number at 240-567-5000
- Montgomery College cable channel 10 in Montgomery County
- Commercial radio and TV stations including:

TELEVISION	RADIO
Channel 4 WRC	WTOP (103.5 FM)
Channel 5 WTTG	WFRE (99.5 FM) – Frederick
Channel 7 WJLA	WAMU (88.5 FM)
Channel 9 WUSA	WFMD (930 AM) – Frederick
News Channel 8	WMAL (630 AM)

If the College opens late or closes early for any reason, the following rule will be used to determine if a class will meet. If a class can meet for at least half of its scheduled time or if the class can meet for 50 minutes or more, then the class will meet.

Information regarding emergency preparedness is available on page 54.

All inquiries from the news media regarding an emergency event should be directed to the College's Office of Communications.

Student Code of Conduct

The College believes that students are adults who are responsible for their own actions and should be free to pursue their educational objectives in an environment that promotes learning, protects the integrity of the academic process, and protects the College community.

The Student Code of Conduct outlines the policies, regulations, and procedures of the College regarding academic honesty and student behavior, including penalties and appeals. The code can be viewed on the web at *www.montgomerycollege.edu/pnp.*

Smoking

Smoking and tobacco use are prohibited in all indoor and outdoor College-owned property and are not permitted within leased College office and classroom space. Tobacco products will not be sold in College facilities. Details of the tobacco use policy, as well as enforcement protocol, can be viewed at *www.montgomerycollege.edu/pnp.*

College Schedule

The College operates on a semester/term basis, fall and spring. Within each credit class term there are nine different parts of term. Each part of term has an associated date range. Credit classes are offered within each of the nine parts of term ranging from five weeks to 15 weeks long. In addition, the College offers two summer sessions and a winter session. All three campuses offer classes and services days, evenings, and weekends, although hours vary. Noncredit courses run year-round, and classes begin weekly. Detailed schedules of the College's credit classes can be reviewed prior to and during registration at *www.montgomerycollege.edu/schedule.* Students must be logged in to MyMC to register for classes.

Germantown Campus

Message from Margaret W. Latimer, Acting Vice President and Provost Germantown Campus

To all of you joining or returning to Montgomery College on the Germantown Campus—welcome. The sprawling, scenic Germantown Campus is located just 30 miles north of Washington, D.C., between Route 355 and Interstate 270. This Montgomery College campus opened on the current site in 1978. Today, the campus serves over 7,500 full-time and part-time day, evening, and weekend students. Our faculty and staff work closely with the arts community and the businesses on the I-270 high-tech corridor, supported by the resources in the High Technology and Science Center, and the county's Germantown Innovation Center in the Paul Peck Academic and Innovation Building. Together, we tailor curricula and courses to prepare our students to work in this dynamic environment. Visit our new Welcome Center in the Science and Applied Studies Building lobby.

The Germantown Campus maintains its commitment to the community by encouraging use of the campus facilities—including conference rooms in the Paul Peck Academic and Innovation Building and the auditorium in Globe Hall, as well as the library and physical education facilities—for club, association, or civic activities.

Building on the success of the Germantown Campus biotechnology instructional programs, we have already begun sowing the seeds for the next generation of scientists and laboratory researchers through a collaborative project to construct a life sciences park, a county-operated technology incubator, and a Bioscience Education Center. The Holy Cross Germantown Hospital, anchor tenant for the Hercules Pinkney Life Sciences Park, and the Bioscience Education Center both open in Fall 2014. These visionary projects will help ensure that the local biotechnology industry continues to thrive for the benefit of students and the local community. Meeting a critical local, state, and national need, the campus also hosts the cybersecurity/networking

program. The College is a founding member of CyberWatch, a consortium of over 70 colleges and universities, preparing skilled cybersecurity/networking technicians.

In the following building descriptions, the codes that appear in parentheses following the building names correspond to the codes used in the campus map, posted on campus buildings, and published in the schedule of classes.

The Child Care Center (CG) is a new state-of-the-art accredited facility licensed to enroll up to 40 children.

The High Technology and Science Center (HT) contains classrooms, computer-equipped classrooms, specialized technology labs, a Technology Lab Center, a Math Accounting Physics Engineering Learning Center, a videoconferencing room, the Globe Hall auditorium with seating for 478, and faculty offices.

The Humanities and Social Sciences Building (HS) contains classrooms, computer-equipped classrooms, the Writing Center and Language Lab, the library, MC Books & More (the bookstore), the cafeteria, and administrative and faculty offices.

The Paul Peck Academic and Innovation Building (PK) contains classrooms and administrative, faculty, and staff offices, including Distance Education and Learning Technologies and the Center for Teaching and Learning, on the first floor. The second floor is being utilized by Montgomery County for a bioscience and technology incubator, the Germantown Innovation Center.

The Physical Education Building (PG) contains classrooms, a gymnasium, a swimming pool, a weight room, locker rooms, and faculty offices.

The Science and Applied Studies Building (SA) contains classrooms, lecture halls, the Welcome Center, the Honors conference room, the Office of Safety and Security (open 24 hours a day), the Admissions and Records Office, the Assessment Center, the Counseling and Advising Office, the Financial Aid Office, the International and Multicultural Student Center, the Student Employment Services Office, the Student Life Office, faculty and administrative offices.

For more information,
visit the campus website at
www.montgomerycollege.edu/gthome
or call 240-567-7700.

Germantown Campus
20200 Observation Drive
Germantown, MD 20876

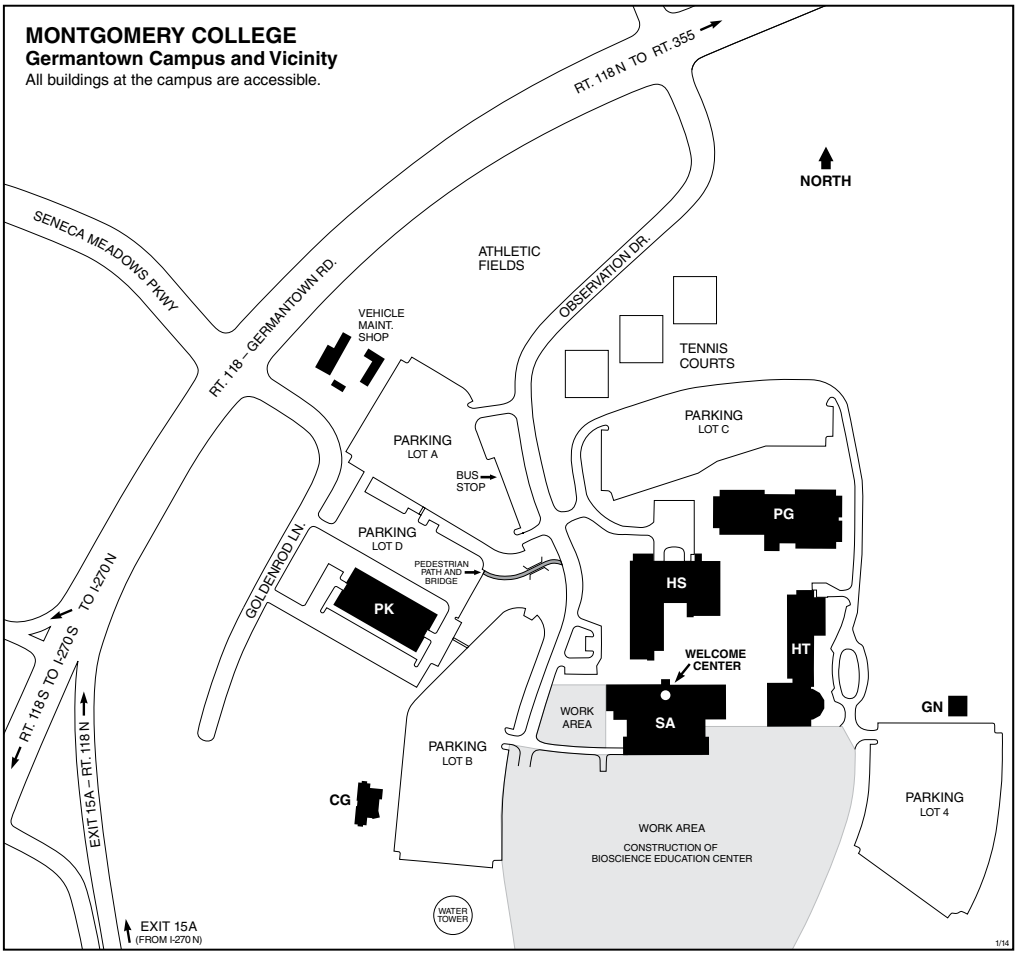
Directions to the Germantown Campus

By Car: Take I-270 to Exit 15 East (Route 118). Continue to the second traffic light at Observation Drive; turn right onto campus. A valid College parking permit is required. Visitor permits can be obtained from the Office of Safety and Security in SA 282.

By Metro: Take Red Line train to Shady Grove station and transfer to Ride On Bus Route 55 to on-campus stop.

By Bus: The campus is served by Ride On Bus with connections to Metrorail. For more information, visit *www.montgomerycollege.edu/maps*.

Montgomery College
Germantown Campus and Vicinity



Montgomery College
Germantown Campus
20200 Observation Drive
Germantown, MD 20876
240-567-7700

montgomerycollege.edu

For updates to campus maps, visit montgomerycollege.edu/maps.

Germantown Campus
Legend of Buildings
(as of January 2014)

- CG Child Care Center
- GN Greenhouse
- HS Humanities and Social Sciences Building
  - *Workforce Development & Continuing Education (WD&CE)*
- HT High Technology and Science Center
  - *Globe Hall*
- PG Physical Education Building
- PK Paul Peck Academic and Innovation Building (formerly Goldenrod Building)
- SA Science and Applied Studies Building
  - *Admissions Office*
  - *Security Office*
  - *Welcome Center*

Rockville Campus

Message from Dr. Judy E. Ackerman, Vice President and Provost, Rockville Campus

As the largest and most comprehensive campus of Montgomery College, the Rockville Campus welcomes approximately 17,000 students each semester. Our community of faculty, staff, and students enjoys academic and cultural programs that reflect the international flavor of an exceptional suburban campus. Accessible by all modes of transportation and located near the vibrant Rockville Town Center, the campus opened in 1965 with 2,489 students. Now, along with thousands of students enrolled in credit courses, Workforce Development & Continuing Education students attend classes here, and community members participate in educational and athletic offerings as well. If you have questions about the Rockville Campus, please call my office at 240-567-5010.

Each day at Rockville, we work diligently to lead, motivate, and inspire our students and partners, and to remain in the forefront by providing relevant learning opportunities for a diverse, dynamic population. We offer exciting signature academic and cultural programs, and we strive to create and maintain a state-of-the-art, welcoming campus. After many years of planning and advocacy, in 2011 we opened the College's first LEED Gold certified building, a new Science Center, which houses the departments of Biology, Chemistry, and Physics, Engineering, and Geosciences, and features an outdoor classroom, a greenhouse, and an observatory. A building near the Science Center will be renovated, and plans are underway for a new Student Services building to provide a centralized experience for new and returning students.

In the following building descriptions, the codes that appear in parentheses following the building names correspond to the codes used in the campus map, posted on campus buildings, and published in the schedule of classes.

The Campus Center (CC) has MC Books & More (the bookstore), CaféMC, dining rooms, MC Copies (graphics and copy shop), and MC Munchies (candy and snack shop). Also in the Campus Center are the Assessment Center, the Office of Student Life and Student Activity Center, Workforce Development & Continuing Education classrooms and offices, and the Marriott Hospitality Center (food management student kitchen).

The Child Care Center (CH) is licensed to enroll up to 40 children.

The Computer Science Building (CS) houses classrooms, computer laboratories, faculty offices, and other computer facilities.

The Counseling and Advising Building (CB) houses Disability Support Services (DSS), including the Learning Center and DSS offices, and the Office of Safety and Security on the first floor (open 24 hours a day); the Counseling/Advising Center, counselor offices, and the Career/Transfer Center are on the second floor.

The Gordon and Marilyn Macklin Tower (MT) contains the library, the Math/Science Learning Center, the Writing, Reading and Language Center; faculty and administrative offices, MCTV and Media Production Services, and the College Archives/Special Collections Office.

The Homer S. Gudelsky Institute for Technical Education (GU) is a state-of-the-art technical training facility offering instructional programs in four primary areas: automotive technology, building and construction technology, electronic publishing, and workforce technologies.

The facility houses instructional laboratories, classrooms, conference rooms, and faculty offices.

The Humanities Building (HU) houses the Writing and Reading Center, an honors seminar room, classrooms, computer laboratories, a conference room, the Evening and Weekend Adjunct Faculty Office, faculty offices, and the mailroom.

The Interim Technical Training Center (TT) houses technical training laboratories and classrooms.

The Music Building (MU) houses a recital hall, a rehearsal hall, practice rooms, studios, an ear-training laboratory, specialized classrooms, and faculty offices. The building is equipped with pianos, organs, and other musical instruments.

The Paul Peck Art Building (AR) contains classrooms, the Sarah Silberman Art Gallery, studios for crafts, sculpture, painting, ceramics, drawing, printmaking, and design, and faculty offices.

The Physical Education Center (PE) includes two all-purpose gymnasiums, a swimming pool with a separate diving area, an apparatus room, a weight room, dance studios, locker and shower facilities, classrooms, and faculty offices. Adjacent to the building are the athletic areas for track, baseball, softball, tennis, and soccer.

The Robert E. Parilla Performing Arts Center (PA) has a 500-seat theatre and is the site for both campus productions and community performances. Its design includes 38 line sets, a greenroom, a Bayreuth pit, a lobby gallery, dressing rooms with showers, and a box office. Student productions are presented here, as are events in the College's Guest Artist Series and Saturday Morning Children's Series. The facility is also used extensively by the public.

The Science Center (SC) houses the department of biology on the first and second floors, chemistry on the third floor, and physics, engineering, and geosciences on the fourth floor. The rooftop has an astronomy observatory. The Science Center addition houses the department of mathematics, classrooms, and math labs.

The Science West Building (SW) is closed in 2014 for renovation. The newly renovated building will house classrooms, mathematics labs, and the Math/Science Learning Center.

The South Campus Instruction Building (SB) currently houses classrooms, the Trio Student Support program, faculty offices, and the Welcome Center.

The Student Services Building (SV) contains the campus offices of Admissions and Records, International Student Coordinator, Student Financial Aid, Cashier, and Veterans Affairs.

The Technical Center (TC) contains facilities for career-oriented programs including applied geography, architectural technology, computer-aided design and graphics, construction management, graphic arts, interior design, photography, and television. It also contains classrooms and faculty offices.

The Theatre Arts Building (TA) contains classrooms, laboratory performance spaces, a scenery shop, technical facilities, faculty offices, and a stage and arena for academic performances and College activities.

For more information,
visit the campus website at
www.montgomerycollege.edu/rvhome
or call 240-567-5000; TTY 301-294-9672

Rockville Campus
51 Mannakee Street
Rockville, MD 20850

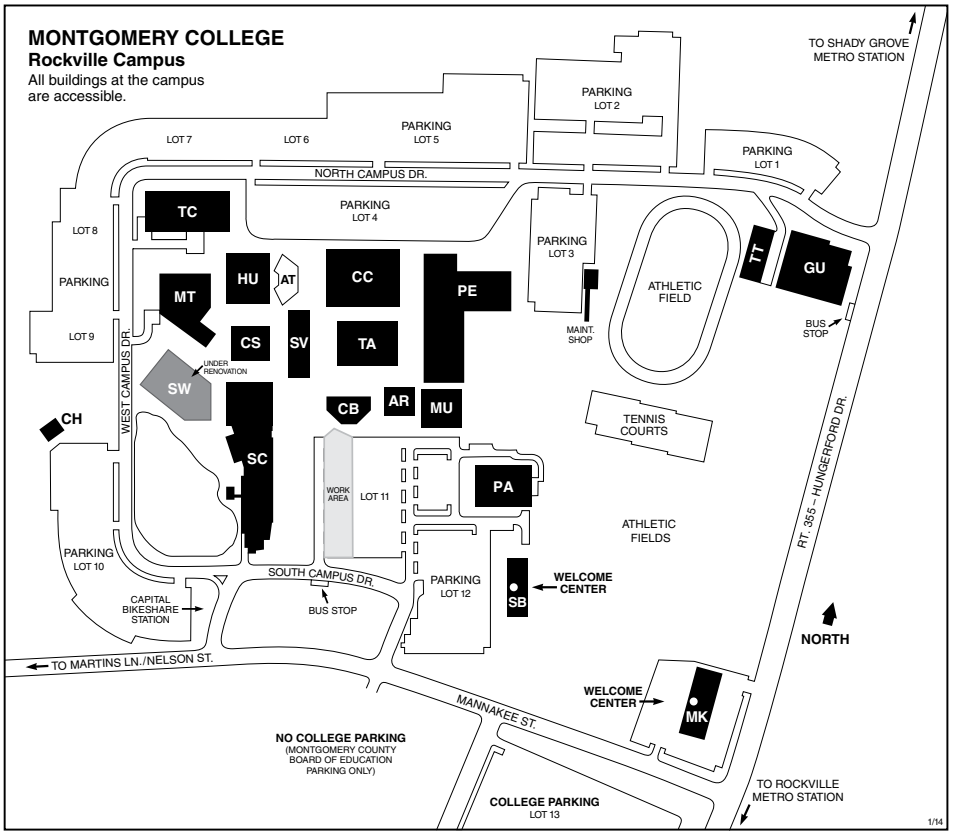
Directions to the Rockville Campus

By Car: *From the north:* Take I-270 South to Exit 6 (Route 28), W. Montgomery Ave./Rockville. Then take Exit 6A (Route 28) East. Turn left at first traffic light onto Nelson Street. Go to first traffic light at Mannakee Street; turn left. The campus is 1-1/2 blocks on the left.

From the south: Take I-495 to I-270 North Exit 6A (Route 28, W. Montgomery Avenue/Rockville). Follow Montgomery College sign through traffic light (road becomes Nelson Street). Go to first traffic light at Mannakee Street; turn left. The campus is 1-1/2 blocks on the left. A valid College parking permit is required. Visitor permits can be obtained from the Office of Safety and Security in CB 101.

By Metro: Take Red Line train to Rockville station and transfer to Metrobus Q2 (Veirs Mill Road line) or Ride On Bus Route 46 to campus bus stop on South Campus Drive.

By Bus: The campus is served by both Ride On Bus and Metrobus routes with connections to Metrorail. Visit *www.montgomerycollege.edu/maps* for more information.



Montgomery College
Rockville Campus
51 Mannakee Street
Rockville, MD 20850
240-567-5000
TTY 301-294-9672
montgomerycollege.edu

For updates to campus maps, visit montgomerycollege.edu/maps.

Rockville Campus
Legend of Buildings
(as of January 2014)

AR Paul Peck Art Building
AT Amphitheatre
CB Counseling and Advising Building
- *Security Office*

CC Campus Center
- *Workforce Development & Continuing Education Office (WD&CE)*

CH Child Care Center
CS Computer Science Building
GU Homer S. Gudelsky Institute for Technical Education
HU Humanities Building
MK Mannakee Building
- *Central Services*
- *Welcome Center*

MT Gordon and Marilyn Macklin Tower
MU Music Building
PA Robert E. Parilla Performing Arts Center
PE Physical Education Center
SB South Campus Instruction Building
- *Welcome Center*

SC Science Center
SV Student Services Building
- *Admissions Office*

SW Science West Building (under renovation)
TA Theatre Arts Building
TC Technical Center
TT Interim Technical Training Center

Takoma Park/Silver Spring Campus

Message from Dr. Brad J. Stewart, Vice President and Provost, Takoma Park/Silver Spring Campus

The Takoma Park/Silver Spring Campus is nestled among charming tree-lined streets and Victorian houses at the edge of Washington, D.C., and it is easily accessible by Metrorail and by bus. Established on this site in 1950, this cosmopolitan campus is the headquarters of the College's health sciences program.

Each semester at Montgomery College's Takoma Park/Silver Spring Campus, we change lives—and change the world, one student at a time. Our dedicated faculty bring expertise and offer quality instruction in over 100 different disciplines to more than 7,800 students from over 140 countries. At Takoma Park/Silver Spring, our students are the centerpiece of all our efforts. We offer a wide variety of learning-centered educational opportunities that affirm our commitment to ensuring student access, retention, and success. Our campus is home to the Paul Peck Institute for American Culture and Civic Engagement, and the School of Art + Design.

We are proud of the many relationships we develop with business and community organizations. Our students gain valuable work experience through internship and volunteer opportunities, which enhance their classroom learning.

We welcome your presence at the Takoma Park/Silver Spring Campus, or any other Montgomery College campus, in person or via distance education. Please experience our campus and take advantage of our top-notch academic and cultural offerings, participate in discussions sponsored by our Paul Peck Institute, visit our art gallery, use our tennis courts and swimming pool, or attend a lecture or theatre performance.

In the following building descriptions, the codes that appear in parentheses following the building names correspond to the codes used in the campus map on page 25, posted on campus buildings, and published in the schedule of classes.

The Catherine F. Scott Commons (CM) includes classrooms, a lecture hall, the Social Sciences Computer Center, the Bliss Exhibition Hall, conference rooms, and offices.

The Charlene R. Nunley Student Services Center (ST) houses the Office of Admissions and Records, the International Student Coordinator's Office, the Counseling Center, the Assessment Center, the Office of Student Financial Aid, MC Books & More (the bookstore), MC Copies (graphics and copy shop), MC Munchies (candy and snack shop), the Office of Student Life, the Cashier's Office, the cafeteria, the mailroom, the Office of Safety and Security (open 24 hours a day), computer-equipped classrooms, and open labs.

The Child Care Center (DC) is licensed to enroll up to 26 children.

The Cultural Arts Center (CU) houses two theatres—a 500-seat proscenium Theatre 1 and a 116-seat modified thrust Theatre 2—the George and Ruth Tretter Dance Studio, a film editing studio, a 16-station piano lab, classrooms, and offices. Student and faculty performances including the Arts Alive and Children's Series, World Music Festival, and Faculty Concert Series, are presented in the center.

The East Garage (EG) provides parking for Montgomery College students, employees, and visitors.

Falcon Hall (FH) houses a gymnasium, swimming pool, racquetball court, fitness center, classrooms, and other specialized areas related to health and physical education.

The Health Sciences Center (HC) provides state-of-the-art health sciences classrooms, laboratories, and other facilities. It also houses a community health center operated by Holy Cross Hospital that offers a valuable learning experience for student nurses.

The Mathematics Pavilion (MP) contains classrooms, the Math Tutoring Center, and math faculty offices.

The Morris and Gwendolyn Cafritz Foundation Arts Center (CF) houses classrooms, art studios, an art gallery, faculty offices, community use studios, and a library. It also houses the Educational Opportunity Center, the Refugee Training Center, and Workforce Development & Continuing Education classrooms and offices.

North Pavilion (NP) houses faculty offices and other offices.

Pavilion One (P1) contains classrooms and faculty offices.

Pavilion Two (P2) contains faculty and other offices.

Pavilion Three (P3) will be under renovation 2014–2015.

Pavilion Four (P4) houses classrooms and faculty offices.

The Resource Center (RC) houses the library; classrooms; faculty offices; the Writing, Reading, and Language Center; and the Career/Transfer Center.

The Science North Building (SN) houses chemistry, engineering, biology, and physics laboratories, a lecture hall and classrooms; the Math/Science Learning Center, and faculty offices.

The Science South Building (SS) houses classrooms, the Mathematics Interactive Computing Classroom, a planetarium, a greenhouse, and faculty offices.

The West Garage (WG) provides parking for Montgomery College students, employees, and visitors.

For more information,
visit the campus website at
www.montgomerycollege.edu/tphome
or call 240-567-1300

Takoma Park/Silver Spring Campus
7600 Takoma Avenue
Takoma Park, MD 20912

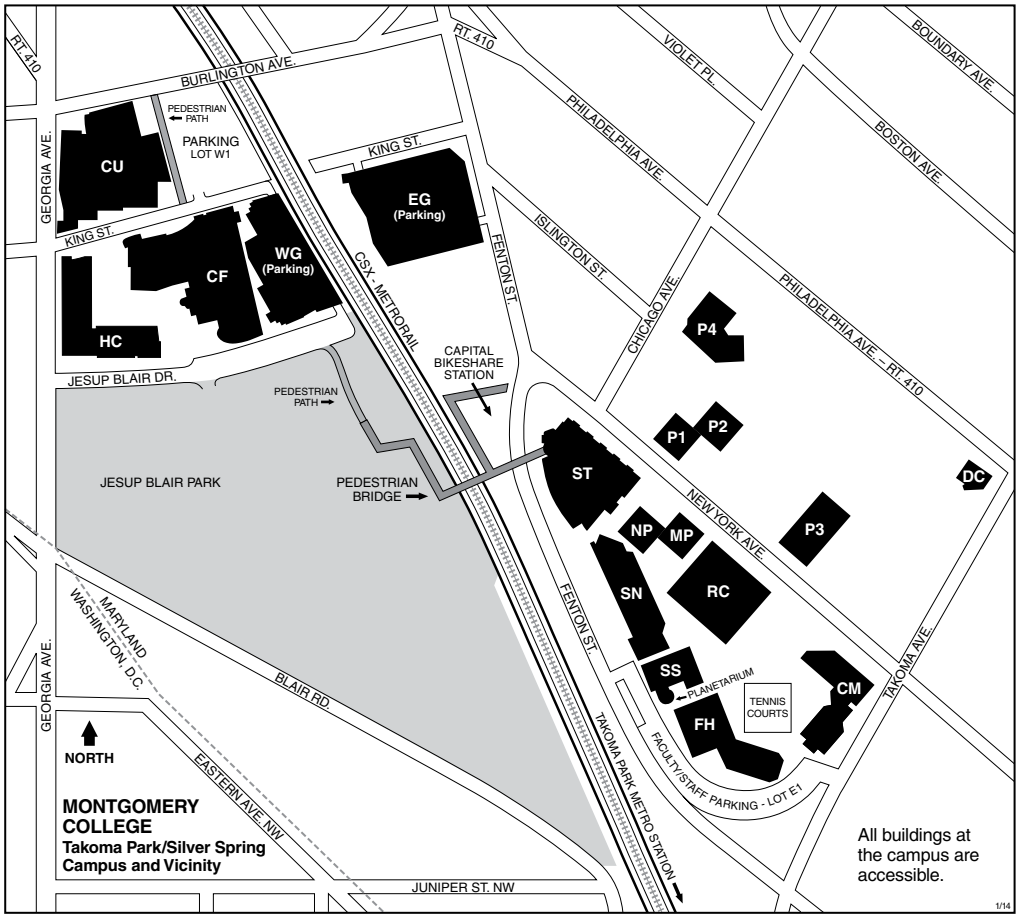
Directions to the Takoma Park/ Silver Spring Campus

By Car: Take I-495 West to Exit 31 or East to Exit 31B, Georgia Avenue South (Route 97). Continue south on Georgia Avenue past the Colesville Road (Route 29) intersection. Following the signs for Montgomery College, turn left on Sligo Avenue. Follow Sligo Avenue to Fenton Street; turn right. Continue (southbound) on Fenton Street through the traffic light at Philadelphia Avenue (Route 410). The East Garage is just ahead on your right, and the campus itself begins one block farther at New York Avenue and Fenton Street. The West Garage is located off Georgia Avenue, on Jesup Blair Drive. A valid College parking permit is required. Visitor permits can be obtained from the Office of Safety and Security in ST 117.

By Metro: Take Red Line train to Silver Spring station, then transfer to Ride On Bus Route 17 or 18.

By Bus: The campus is served by both Ride On Bus and Metrobus routes with connections to Metrorail. Visit *www.montgomerycollege.edu/maps* for more information.

Montgomery College
Takoma Park/Silver Spring Campus and Vicinity



Montgomery College
Takoma Park/Silver Spring Campus
7600 Takoma Avenue
Takoma Park, MD 20912
240-567-1300
TTY 301-587-7207

montgomerycollege.edu

For updates to campus maps, visit montgomerycollege.edu/maps.

Takoma Park/Silver Spring Campus Legend of Buildings
(as of January 2014)

- CF The Morris and Gwendolyn Cafritz Foundation Arts Center
  - *Educational Opportunity Center (EOC)*
  - *Refugee Training Center (RTC)*
  - *Workforce Development & Continuing Education (WD&CE)*
- CM Catherine F. Scott Commons
- CU Cultural Arts Center
- DC Child Care Center
- EG East Garage (parking)
- FH Falcon Hall
  - *Physical Education*
- HC Health Sciences Center
- MP Mathematics Pavilion
- NP North Pavilion
- P1 Pavilion One
- P2 Pavilion Two
- P3 Pavilion Three
- P4 Pavilion Four
- RC Resource Center
- SN Science North Building
- SS Science South Building
  - *Planetarium*
- ST Charlene R. Nunley Student Services Center
  - *Admissions Office*
  - *Security Office*
- WG West Garage (parking)

Workforce Development & Continuing Education

Message from Mr. George M. Payne, Vice President, Workforce Development & Continuing Education

The Workforce Development & Continuing Education (WD&CE) programs at Montgomery College provide a wide range of pre- and post-degree educational offerings and services designed to meet the needs of county residents and businesses. Individuals in career transitions, those re-entering the workforce, and those maintaining current technical skills, as well as those seeking lifelong educational enrichment experiences, are among the more than 25,000 students of the WD&CE programs each year.

With more than 1,700 courses offered year-round, the chances of finding a course of interest are excellent. High-quality noncredit courses are available in more than 25 program areas, including information technology, small business and management, technical training, certification and licensure preparation, financial planning, real estate, child care, health sciences, personal development, career development, writing, American English, cultural diversity, customer service, quality management, and leadership development. These course offerings change continuously to reflect the ever-changing needs of the businesses and communities we serve.

Courses are offered through six program areas: Community Education and Extended Learning Services; Business, Information Technology, and Safety; the Gudelsky Institute for Technical Education; the Health Sciences Institute; the School of Art + Design; and Adult ESOL and Literacy-GED Programs. Courses in these program areas may be taken at the three College campuses and at other community sites, including the Westfield South Center in Wheaton and the Business Training Centers in Olde Towne Gaithersburg and Silver Spring. Courses are of varying lengths, have flexible start dates, and are offered in the daytime, evening, and weekend to suit the needs of the populations served.

Many WD&CE credit and noncredit courses are delivered as a result of a customized training program developed for business and community organizations. Contract training partnerships align College education and training resources with the demands of the workplace and are tailored to each business partner's requirements. Employer-sponsored training programs have grown significantly in recent years and are frequently delivered at the business location.

For more information on WD&CE programs, please visit our website at *www.montgomerycollege.edu/wdce.*

Online Learning Courses

Each month, Montgomery College offers an exciting array of hundreds of noncredit online courses. These are open to everyone. Most of the online courses are six weeks in length and include such topics as Office Skills, Computer Skills, Digital Photography, Webpage Design, Personal Enrichment, Health Care Continuing Education, and Career Skills. These courses offer two lessons a week for a total of 12 lessons. For more information, please visit the website: *www.montgomerycollege.edu/wdce/nconlinecourses.html.*

Who Is a WD&CE Student?

People of all ages, educational backgrounds, and interests participate in WD&CE courses each year. These people come from many walks of life and many occupations, including business professionals, health care providers, technicians, engineers, teachers, homemakers, students with prior degrees, and retired persons. WD&CE courses appeal to those with a lifelong interest in learning.

Special Programs

Adult ESOL and Literacy-GED Test® Preparation Programs

The Adult ESOL (English for Speakers of Other Languages) and Literacy-GED (General Educational Development) Test® Preparation Programs are grant-funded programs offering a variety of English, basic skills and vocational classes for immigrants, refugees, and those in need of a high school diploma. Classes in these programs are free or at a reduced tuition rate.

The Adult ESOL Program has six levels and provides basic English language and life skills instruction to county residents whose native language is not English. Classes are also available in English in civic participation and U.S. citizenship preparation. Classes are offered at a variety of times throughout the county. Participants in these programs work with a college and career coach who will help them transition to other vocational programs offered by the College.

The Refugee Training Program is a grant-funded program that offers classes in English for documented refugees and political asylees in the American workplace, basic life skills, computer literacy, and pre-vocational training in health care and other fields. For more information, please visit the website: *www.montgomerycollege.edu/wdce/aelg/refugeecenter.htm.*

Vocational ESOL courses such as ESOL for Healthcare Jobs, ESOL for Customer Service Jobs, and ESOL for Building Trades Jobs are offered for students interested in preparing for employment and further training. The College also offers integrated courses where students work on English and basic skills while simultaneously training to become a licensed geriatric nursing assistant or certified apartment maintenance technician. Participants in these programs are also support to transition to employment and other vocational programs offered by the College.

The grant-funded Citizenship Program prepares newcomers to the United States for the U.S. naturalization exam and American citizenship. Classes are throughout the county and offered year round.

The Literacy-GED Test® Preparation Program serves those who have not obtained a high school diploma and need to improve their literacy, writing, numeracy, and other content area skills in order to pass the GED® examination. The Literacy-GED Test® Preparation Program also offers community orientations on the GED® test and program services. For more information on these classes, please visit the website *www.montgomerycollege.edu/wdce/aelg/index.htm.*

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English as a Second Language (Noncredit ESL)

To meet the expanding need for language training, WD&CE offers a broad array of English courses to help students whose native language is not English prepare to enter the American English Language Program (AELP) or to enhance their proficiency in English in order to progress professionally. For more information, please visit the website: *www.montgomerycollege.edu/wdce/ce/esl.html.*

Biotechnology

The biotechnology workforce development program serves the needs of the county's growing biotechnology industry. Courses are offered to interest both scientists and the general public. Topics include basic biotechnology, laboratory skills, and Food and Drug Administration (FDA) regulatory compliance. Customized training options are available.

Business Training Services

WD&CE works with many local businesses, governmental agencies, and community organizations to provide training solutions to meet specific organizational goals. Existing course offerings can be tailored to focus on specific topics of interest, or new course material can be developed to meet specific training needs. Course length and content

are determined by the training requirement. Classes are then held at a College location or frequently are held in an organization's training or conference room. The full course inventory of the College can be drawn upon to meet workplace education and training needs and can be delivered in a wide variety of learning formats, including on-site, web-based, intense, or regular-length instructional programs. Technical assistance in the development of a customized course series may include convening focus groups, conducting needs assessments, curriculum development, learning outcome assessments, and educational program design. For more information, please visit the website *www.montgomerycollege.edu/Departments/cedeptrv/contracttraining.html.*

World Languages

WD&CE offers affordable, dynamic noncredit courses in a variety of world languages: currently offered are Farsi, French, German, Italian, Korean, Mandarin, Portuguese, Russian, Spanish, and American Sign Language. The primary goal of the language courses is to develop communication skills in the language as quickly as possible. These courses work to meet a wide variety of needs, from basic communication skills to advanced levels of instruction for those with good fluency. Contract classes and customized courses are also available to local businesses, government agencies, and community organizations. For more information visit the website: *www.montgomerycollege.edu/wdce/ce/foreignlanguages02.html.*

Gudelsky Institute for Technical Education

To meet the technical education and training needs of the workforce and the community, the Homer S. Gudelsky Institute for Technical Education (GITE) provides instructional programs in four primary areas: automotive technology, building trades technology, electronic publishing, and workforce technologies. The automotive technology program, including training in hybrid and electric car functions and service, is Master Certified by the National Automotive Technicians Education Foundation. The building trades technology program, including training in solar and wind installation and service, is authorized by The North American Board of Certified Energy Practitioners. With this program the HVAC curriculum is certified by the Partnership for Air Conditioning, Heating, and Refrigeration Accreditation. GITE offers both credit and noncredit courses via classroom and lab training, on-site or off-site customized contract training, apprenticeship training, and long- or short-term training. A community benefit of GITE is the Fab Lab, where visitors can bring innovative ideas, develop creative projects, and build new items or technologies. For more information, please visit the website at *www.montgomerycollege.edu/departments/gitervv.*

Health Sciences Institute

The Health Sciences Institute was designed to meet the needs of health care providers in the metropolitan Washington area. It offers both noncredit and credit courses and programs of study in various health care careers. These courses and programs will provide individuals with workforce skills, certification in specific disciplines, and associate degrees in an array of health sciences. Customized courses and programs, training courses, seminars, and specialty workshops are available. Experienced faculty, from the College or from the local community of health care providers, participate to develop the workforce for the health care community. For more information, please visit the website: *www.montgomerycollege.edu/healthsciences.*

Hispanic Business & Training Institute

The Hispanic Business & Training Institute (HBTI) was created in 1999 as a partnership between the College, Montgomery County Department of Economic Development, and Hispanic Chamber of Commerce of Montgomery County. HBTI has since grown into an award-winning program through which training increases economic opportunities for the Hispanic community. HBTI offers a variety of training programs in small business, home improvement licensure, OSHA safety training, computer applications, food safety certification, legal assistant, and occupational Spanish. For more information,

please visit the website: *www.montgomerycollege.edu/wdce/hispanicbusinessinstitute.html.*

Information Technology Institute

In response to the need for skilled information technology workers, the College established the Information Technology Institute (ITI). ITI offers noncredit courses at all three College campuses as well off-campus centers in Gaithersburg and Wheaton. In addition, ITI provides customized training at business sites throughout the region.

ITI is designed to prepare new workers and retrain existing workers to fill positions in Montgomery County's information technology market. Courses are available to meet a wide range of student needs and career goals and are taught by faculty with years of practical experience.

The College is a member of the Microsoft IT Academy, Oracle Academic Initiative, Oracle Workforce Development Program, and Cisco Systems Networking Academy. Courses in these programs offer students the opportunity to prepare for industry certification examinations.

ITI also offers TechLEAP, a 6–12-month retraining program with a paid internship for individuals seeking new careers in the information technology field.

For more information on ITI, please e-mail *edmund.palaszynski@montgomerycollege.edu* or visit the website at *www.montgomerycollege.edu/iti.*

Professional Licensure and Certification

To help the professional community meet certification or licensure requirements, numerous WD&CE courses are offered in cooperation with business, government, and professional organizations in the following areas:

- insurance, real estate, small business, mortgage loan, and Society for Human Resources Management (SHRM) and American Management Association (AMA) certification courses (see *www.montgomerycollege.edu/wdce/professionallicense.html* and *www.montgomerycollege.edu/wdce/management.html* for more information);
- automotive, electrical, plumbing, stationary engineering, and occupational safety;
- health care, including nursing;
- computer and networking fields;
- cosmetology (see *www.montgomerycollege.edu/wdce/ce/cosmetology.html);* and
- veterinary assistant (see *cms.montgomerycollege.edu/wdce/ce/veterinaryasst.html.*

Project Management

Montgomery College's WD&CE Department is a Global Registered Education Provider by the Project Management Institute (PMI). Courses in a variety of project management topics prepare individuals for new roles in project management and also prepare them for the PMI certifications, including the nationally and internationally recognized Project Management Professional certification. For more information, please visit the website: *www.montgomerycollege.edu/wdce/bits/projectmanagement.html.*

SAT/ACT Preparation

WD&CE offers a preparation program to high school students and anyone preparing to take the SAT and/or ACT. They are comprehensive, short-term, affordable courses that review content skills and provide extensive timed practice with real sections of the SAT or ACT. Classes are held primarily on the College campuses after school, evenings, and weekends. Courses are offered during the summer and prior to six testing dates during the school year. For more information, visit the website *www.montgomerycollege.edu/wdce/ce/satprep.html.*

Senior Adult Programs

The Lifelong Learning Institute offers many courses primarily designed for county residents age 50 or older. The Institute provides affordable, relevant, and dynamic learning opportunities conveniently held at campus and community locations. The Lifelong Learning Institute is committed to creating and fostering a variety of intellectually

stimulating opportunities in the arts, humanities, lifestyle, and personal finance areas. The College is growing a series of courses related to employment preparation and repositioning. For more information, please visit the website: *www.montgomerycollege.edu/wdce/ce/lifelonglearning.html.*

Youth Programs

WD&CE Youth Programs offers specialized and enrichment programs throughout the school year for students in kindergarten through 12th grade. These programs are offered in special one-day enrichment workshops, after-school and Saturday minicourses, and a comprehensive nine-week summer program. Many programs are collaborative efforts with Montgomery County Public Schools. For more information, please visit the Youth Programs website at *www.montgomerycollege.edu/wdce/youth.html.*

Extended Learning Services

Extended learning options include off-campus credit courses and Assessment of Prior Learning.

Off-Campus Courses

Courses Open to the Public. Credit courses are offered at conveniently located government and company sites throughout Montgomery County. These courses follow the same syllabi as campus courses; are taught by faculty qualified to teach at the Germantown, Rockville, and Takoma Park/Silver Spring campuses; and are supported by campus departments. For more information, please visit the Extended Learning Services website: *www.montgomerycollege.edu/wdce/extendedlearning.html.*

Employer-Sponsored Programs. Numerous public agencies and private companies have arranged to provide for college credit courses to their employees on site, either during or after normal working hours. These courses are typically job related and are normally paid for by the employer under the College's business and industry agreement, which enables county-based agencies and businesses to pay in-county tuition rates regardless of where their employees reside. Some of the organizations that have sponsored on-site programs through Montgomery College are the National Institute of Standards and Technology, divisions of the FDA, the National Institutes of Health, and Choice Hotels International.

Assessment of Prior Learning

Students may be able to obtain college credit for prior learning experiences. Montgomery College can evaluate these experiences through

- credit by examination, if available, administered by each department—contact the appropriate department for information;
- CLEP (College Level Examination Program) testing administered by Extended Learning Services—send an e-mail to *clep@montgomerycollege.edu* for test dates and applicable information and to get answers to a set of frequently asked questions; or
- the Portfolio Assessment Program administered by Extended Learning Services.

In addition, students who have completed employer-sponsored training programs may want to investigate whether the American Council on Education (ACE) has evaluated that training and recommended awarding college credit.

More information is available at the website: *www.montgomerycollege.edu/assessment_prior_learning/index.html.*

Workforce Access Programs

WD&CE offers noncredit programs for students with developmental disabilities, including the Graduate Transitions Program (GTP) and the Challenge Program.

GTP is a certificate program designed for students with developmental disabilities who want to pursue postsecondary education. GTP offers a custom-tailored learning community enabling students to transition to greater independent living through

functional education, vocational and employment training, and life skills. This noncredit program focuses on basic academic skills and enhancing potential success as productive citizens in our community.

The Challenge Program is a collection of courses designed to help adults with developmental disabilities function more independently in the home, at work, and in the community. Course topics include computers, reading, vocabulary building, art, math, theatre, small business, and more.

For more information visit the website at *www.montgomerycollege.edu/wdce/academicworkprep.html.*

How to Enroll

The Admissions and Registration section of this catalog describes the procedures for enrolling in noncredit or credit WD&CE courses. For a schedule of current noncredit WD&CE offerings, please call 240-567-5188, e-mail *wdce@montgomerycollege.edu*, or visit the website at *www.montgomerycollege.edu/wdce.*

Tuition and Fees

The registration fee and tuition for WD&CE courses and other offerings are determined periodically by the vice president for WD&CE. Please call 240-567-5188 or refer to the course schedule or the website at *www.montgomerycollege.edu/wdce* for tuition and fees.

Distance Education

The College offers students the opportunity to earn college credit from a distance through two types of online courses: fully online or blended. Fully online courses are taught entirely over the Internet. Students sign in to the course where they "meet" their instructor, access the syllabus and other course materials, participate in discussions, collaborate with other students, turn in assignments, and possibly even take quizzes and exams. Faculty teaching fully online courses rarely require students to come to campus, other than possibly to attend a course-specific orientation or to take proctored exams. Blended courses require regular, predetermined classroom attendance in addition to coursework that is conducted online. Both types of online courses provide students with flexibility and convenience. Some online courses allow for real time interaction through chats or the virtual classroom. If a course requires on-campus meetings, the information will be included in the section notes available from the class schedule, found online at *www.montgomerycollege.edu/credit.*

Online courses require the same prerequisites, admissions, and registration procedures as do on-campus courses. Online courses have the same learning objectives as those taught in a traditional format. Distance Education students have access to the same services as do on-campus students, including online or walk-in counseling and advising sessions, libraries and library databases, and learning centers on any campus.

An online orientation is available to help students learn more about Distance Education. Please go to *http://cms.montgomerycollege.edu/distance/onlineorientation* to access the orientation, or call 240-567-6000 for additional information.

Admissions and Registration

Admissions Policy

Montgomery College is committed to a policy of equal opportunity in student admissions, student financial assistance, and other student policies and procedures without regard to age, sex, race, color, religious belief, national origin, or disability. It is the policy of the Board of Trustees of the College that all who are high school graduates, or the equivalent, and who can benefit from the programs and services of the College, shall qualify for admission. Others may also, under certain circumstances, be considered for admission. To accommodate the various interests and goals of persons requesting admission to the College, applicants, depending on their objectives and educational background, are admitted to the credit programs and courses of the College in the following categories: degree or certificate seeking (curriculum decided); degree or certificate seeking (curriculum undecided); or non-degree seeking.

Some curricula of the College have a limit on the number of students who may be admitted. In addition, admission to the College does not automatically qualify a student for all courses and curricula; some programs and course offerings have more stringent requirements. Students should contact the appropriate College departments and the Office of Admissions and Records for more information.

Criteria for Admission to Montgomery College Credit Programs

In order to satisfy minimum qualifications for enrollment in the College's credit courses, in addition to submitting an application, the applicant must meet any one of the following conditions:

1. Be a graduate of an accredited high school.
2. Have satisfactorily completed the GED examination.
3. Be a high school student, or equivalent, who has completed the sophomore year with a 3.0 quality point average or the junior year with an overall 2.75 quality point average (based on a 4.0 scale) and be recommended by a high school guidance counselor or principal. The student must have an articulated plan for concurrent high school attendance and enrollment in college-level, credit-bearing coursework during the junior and senior years. That plan must have the approval of parents (or guardians) and counselor, and the plan will include all courses required for high school graduation. These standards are applicable in summer terms as well as fall and spring semesters. The deans of student services may recommend a waiver to the chief enrollment services and financial aid officer in exceptional circumstances.
4. Be a student in a public or private school, or equivalent, who does not meet the requirements in number 3 above, but whose achievement in a certain field of study is clearly exceptional. This achievement may be documented through testing or other means deemed necessary by the relevant dean, department chair, or faculty, and it must surpass the level of courses offered by the school attended. The College may admit the student upon the recommendation of the high school counselor or principal. The approval of the dean of student services on the campus where the course is to be taken is also required.
5. Be a student who is homeschooled and who is in compliance with state and county education guidelines. A verification letter from a student's county home school program office, indicating that the applicant is registered with the local school system as home schooled, should be submitted with the application for admission. All requirements listed in 3 and/or 4 above also apply.

6. Be a person 16 years old or older who has graduated from, or left, secondary school.

In all cases, the College reserves the right to make the final decision on admission.

Admissions Procedures for Credit Programs

All applicants must submit an application for admission to the Office of Admissions and Records, together with the $25 nonrefundable application fee. Newly admitted students will receive a welcome letter with instructions regarding assessment tests, advising, or other procedures required for registration. Applicants who plan to enroll in selective admission programs, including the health sciences and some art and music majors, should contact the Office of Admissions and Records regarding additional admission procedures.

Applicants for Health Sciences Programs

The health sciences programs have additional admission and enrollment requirements. These selective programs are available only at the Takoma Park/Silver Spring Campus and require a special application form. All candidates must be eligible for admission to the College (a Montgomery College application for admission must be submitted at the same time as the health sciences application, if the general application was not submitted previously); must meet curriculum admission criteria that have been approved in advance by the campus vice president and provost for the curriculum for which the student is applying; and must have a minimum grade point average of 2.5 (on a 4.0 scale) for consideration. All candidates' backgrounds will be reviewed for appropriate academic preparation. Applicants to the Diagnostic Medical Sonography, Nursing, Radiologic Technology, Surgical Technology, Physical Therapist Assistant, and Polysomnography Programs are required to take the Test of Essential Academic Skills (TEAS) before applying.

All candidates who are offered admission to a health sciences program must meet all legal requirements and/or standards imposed by recognized professional societies and by the institution or agency where the clinical practice is to occur and must understand that participation in certain clinical courses (e.g., those involving hospital practice) requires the passing of appropriate health examinations (e.g., a TB test and/or certain vaccinations), drug tests, and a criminal background check through the Maryland Hospital Association Student Check Program. Certain clinical sites are only available to U.S. citizens and permanent residents due to their nature as a federal facility.

Applicants for the School of Art + Design at Montgomery College

Prospective students must submit a School of Art + Design (SA+D) application, a portfolio of previous artwork, official transcripts (high school or college) that reflect a 2.3 or better grade point average, and a letter of recommendation. Students must be accepted into the SA+D program prior to course registration.

International Applicants

The College is proud to have a large and highly diverse enrollment of international students from over 170 countries. International students who require a student visa (F1 or M1) should contact the international student coordinators in the Office of Admissions and Records for additional enrollment procedures. For details, see *www.montgomerycollege.edu/F1* for details.

Applicants Enrolled in Another College/University

Applicants who are enrolled in another college or university and wish to take courses at Montgomery College must apply for admission and should submit a letter of permission from the home institution before attempting to register. Doing so will streamline the registration process and ensure the transferability of credit to the home institution. For details, see *www.montgomerycollege.edu/visitingstudents.*

Applicants Who Lack a Secondary School Diploma or GED

Applicants who lack a secondary school diploma or GED credentials, and who have not attended another college or university, are limited to enrollment in two courses per semester or summer term until the completion of 12 hours with a cumulative 2.0 grade point average, unless special permission is granted by the chief enrollment services and financial aid officer or designee. The campus dean of student services or designee may recommend permission based on documented potential.

Personal Interest Applicants

Personal interest applicants whose first language is English are exempt from assessment testing for all courses, with the exception of English and mathematics. However, they must meet specific course prerequisites and any other applicable regulations. The personal interest admissions category is available to those who have been out of high school a minimum of three years and do not plan to pursue a degree.

Admissions/Registration Procedures for Workforce Development & Continuing Education Courses

There are four easy ways to register for Workforce Development & Continuing Education (WD&CE) courses:

1. In person at the Office of Admissions and Records on any campus; or at WD&CE Customer Service, 220 Campus Center, Rockville Campus; or at the satellite locations: Gaithersburg Business Training Center or Westfield South Center.
2. By mail: send the WD&CE registration form to WD&CE, 51 Mannakee Street, 220 Campus Center, Rockville, MD 20850.
3. By fax: 240-567-7860.
4. Online at the College website (*www.montgomerycollege.edu)*, for students who have previously enrolled in a Montgomery College credit or noncredit course.

Registrants will be enrolled in the order that registration and payments are received.

Students in the Adult ESOL and Literacy-GED Programs or Refugee Training Program should contact those offices for registration assistance, since the procedures are different from the four options described above. For more information, visit the website at *www.montgomerycollege.edu/wdce/aelg/index.htm.*

For off-campus and nontraditional credit courses and programs such as Distance Education and Assessment of Prior Learning, applicants must follow the same procedures required of all individuals seeking admission to the College's credit programs.

Assessment Testing (Appropriate Course Placement)

The College uses assessment tests to determine skill levels for placement in courses. These tests help students identify areas of strength as well as areas in need of skill development. Based on the results of these tests, students will be placed in the appropriate level of credit or noncredit courses. Students will also be counseled on developing a schedule with the appropriate mix of courses.

Different assessment tests and placement procedures may be used depending on the English language skills of the applicant. Although these tests provide opportunities for college-level course placement, some students may not be immediately placed in college-level courses.

The following students must take an assessment:

- all first-time college students who are seeking a degree or certificate or who are planning to transfer to another institution;
- full-time students enrolled for more than 12 credit hours;

- students who want to enroll in their first English or mathematics course; and
- students who were not previously tested or who did not follow their recommendations and whose academic records have placed them on academic restriction, alert, or suspension.

Students with documentation of previous college-level coursework in English or mathematics or with documentation of appropriate scores on one of the standardized tests accepted by the College are exempt from assessment. Personal interest students who are not enrolling in their first English or mathematics course may take up to 11 credits (in courses that do not require English or mathematics prerequisites) before determining whether assessment testing is needed.

Students must have an application on file in the Office of Admissions and Records in order to schedule a time for assessment. Students who assess as needing pre-college level courses are required to complete those courses before they can enroll in college-level courses.

Counselors and academic advisers will assist all students in developing educational plans that are best suited to individual goals, interests, and demonstrated skills.

Credit for Prior Learning

Advanced Standing Credit

Students may be awarded Montgomery College credit for prior learning in accordance with approved academic regulations of the College. The Office of Admissions and Records will evaluate courses taken at other institutions and tests taken to earn college credit upon request by degree-seeking students and upon receipt of appropriate documentation. Such documentation may include

- official transcript from an accredited U.S. college or university;
- scores from advanced placement examinations (i.e., AP, IB, or A-levels);
- transcript from CLEP (College Level Examination Program) tests or the DSST;
- credit-by-examination for courses identified in the catalog with "CE" after the course title—Montgomery College faculty prepare and evaluate such examinations or designate CLEP tests to be used in place of internally prepared examinations;
- high school transcript and credit award form for approved transfer agreements between the College and Montgomery County Public Schools;
- transcript of technical training in a nationally accredited training program that has been listed in the Council on Postsecondary Accreditation and/or American Council on Education publications; or
- military transcript.

Students seeking advanced standing credit for coursework completed outside of the United States must have their transcripts evaluated by an independent, accredited credentialing service. This evaluation must then be forwarded directly from the service provider to the Office of Admissions and Records at the campus a student plans to attend. To assure evaluation prior to the start of the semester/term, documents must be received by April 1 for summer, July 1 for fall, or November 1 for spring.

Credit by Learning Assessment (Portfolio Option)

Students may also receive credit for prior learning through the Portfolio Assessment Program. Call 240-567-7870 for additional materials and information.

More information about all prior learning assessments may be obtained from *www.montgomerycollege.edu/transferin.*

Financial Information

Tuition and Fees

Tuition and fees paid by students cover a significant portion of the cost of the operation of the College. Revenues from the county and state governments make up nearly all the difference.

Students registered at the College pay tuition according to their residency classification, using the criteria outlined in Appendix A. Refer to the class schedule and/or the College website for current tuition and fee information.

The College reserves the right to change tuition and fees at any time at the discretion of the Board of Trustees.

In addition to tuition, students pay a consolidated fee of 20 percent and other applicable fees. Some courses require that students purchase textbooks and additional supplies or equipment, which may add significantly to the cost of these courses.

Appeals of Residency Classification

A change in residency classification or an appeal of current classification, as outlined in Appendix A, may be requested within a reasonable time following a decision by the College. Appeals for changes of residency classification must be accompanied by evidence justifying such changes and must be processed prior to the end of the third week of classes. Any changes processed after the third week of classes will be effective the following semester. Appeals must be submitted in writing to the campus registrar. If the student is not satisfied with the decision of the registrar, a written appeal may be made to the chief enrollment services and financial aid officer, whose decision is final.

Business/Industry Tuition Agreements

Businesses or other organizations that do business in the state of Maryland may be eligible to enter into an agreement with the College that affords their employees or members tuition and fees at the in-county residence rate, regardless of actual domicile. The courses taken must benefit the employer, and the employer must pay for the courses directly or through an employee reimbursement program. Contact the Office of Admissions and Records for more information.

Tuition Waiver

People 60 Years and Older. Maryland state residents who have enrolled in any credit or credit-equivalent course offered by the

College will have their tuition waived if they are 60 years of age or older.

Persons age 60 or older must register during the final three days of registration in order to get tuition waiver on a space-available basis.

People with Disabilities/Maryland National Guard. Any resident of Maryland who is a member of the Maryland National Guard for a minimum of a 24-month enlistment and enrolls in any class at the College, which is eligible under the Annotated Code of Maryland, Section 16-106 (Educ.) for state support, shall be eligible for a 50 percent waiver of the tuition.

People with Disabilities. Any resident of Maryland who is out of the workforce because of a permanent disability as defined by the Social Security Act, the Railroad Retirement Act, or—in the case of former federal employees—the Office of Personnel Management and who enrolls in a community college class that has at least 10 regularly enrolled students may be eligible for a tuition waiver. The waiver is available for six credits per semester for students who have not declared a degree or certificate program. If a student enrolls in a degree program, they are eligible for up to 12 credits of tuition waiver per semester. Students must complete the Federal Application for Federal Student Aid online by the priority deadline (May 15 for fall semester, November 1 for spring or winter sessions, April 1 for summer sessions). For more information on this tuition waiver, visit *www.montgomerycollege.edu/hb104*.

Foster Care Recipients. Any foster care recipient who resides in a foster home located in the state of Maryland, and who is enrolled at the College in an associate's degree program on or before reaching 21 years of age, shall be eligible for waiver of tuition and mandatory fees, provided that he or she has filed for federal and state financial aid by March 1 of each year.

Fees

Fees related to registration, tuition, and other charges are payable in full by the deadline indicated, unless the student has signed up for an installment plan. No fees are to be collected in the classroom. Fees are not normally refundable.

Application fee (nonrefundable)**:** $25
This nonrefundable fee must accompany all applications for admission from students who will be registering at the College for the first time.

Applied music fee: $150 per credit/billing hour
Covers the additional costs associated with applied music courses.

Change of schedule fee: $10
Within the first week (seven calendar days including the day classes begin as stated in the College calendar) of classes, students may adjust their schedule of study at no charge. Thereafter, a fee is charged for each schedule change.

Consolidated fee (see refund policy later in this section): 20 percent of total tuition with a $50 minimum (not to exceed 20 percent of maximum charge for each residence category).

All students must pay this fee, which is intended to partially offset the costs associated with registration, records, use of various in-class instructional and laboratory supplies and equipment, instructionally related items (such as library, learning resources, and counseling and advising materials and services), student activities and athletics, and alumni activities. Eleven percent of the consolidated fee for the fall semester and spring semester for all on-campus credit-hour students will be deposited from the consolidated fee to the credit and support of campus student athletics (intercollegiate and intramural) and other student activities.

Credit-by-examination fee: 40 percent of in-county tuition rate.

This fee is charged to students on the basis of the number of credit hours in the course and is equal to 40 percent of the in-county tuition rate. Where a national examination is

used, any additional charges will be paid by the student.

Invalid check fee: $35/occurrence
This fee is charged if a paper check or electronic check, given for and/or by a student, is not honored by the bank. Returned checks may cause the student's registration to be cancelled.

Late payment fee: $50 (nonrefundable)

Late registration fee: $50 (nonrefundable)
This nonrefundable fee is charged to students who register after the last regular registration date listed in the schedule of classes. It is payable at the time of registration.

Library fines and fees (as incurred)
Each library patron is responsible for returning books or other materials to the library. Fines are assessed for overdue materials. A fee is assessed based on the value of damaged or nonreturned materials.

Major facilities reserve fund fee: $5 per credit/billing hour
This fee is to fund capital additions to and construction of nonadministrative facilities.

Replacement diploma fee: $25
This fee is charged to students who wish to replace a lost or mutilated diploma.

Student status letter of certification fee: $5
This fee is charged each time a College office must produce a certification of various types of College academic and financial records. Certifications may be in the form of a letter certifying the full-time status of the student (or other academic information) or in the form of a copy of the student's financial record with the certification that the copy is a true and accurate record. This fee is only assessed for those certifications that are College generated. Certifications that are sent to the College and merely signed are not subject to this fee. No certifications will be issued for any student who is financially delinquent with the College.

Study abroad fee: $200
This fee is assessed to students participating in the College's Study Abroad Program to fund the additional administrative costs associated with the program.

Technology fee: $5 per credit/billing hour
This fee is assessed to partially offset the costs of technology associated with instructional programs. Fees are not refundable after the 100% refund date for the course.

Traffic fines: (variable)
Fines are charged for violations of the College traffic regulations. See the *Montgomery College Motor Vehicle Regulations* publication available online at *www.montgomerycollege.edu/verified.*

Transcript fee: $7/issue
A fee of $7 is charged for each transcript issued. No transcript will be issued for any student who is financially delinquent with the College.

Transportation fee
(nonrefundable): $4 per credit/billing hour
This nonrefundable fee is assessed to establish an enterprise fund designated for transportation operations.

Financial Responsibility

Each student is individually responsible for his or her tuition and fees. Payment in full is due at time of registration unless an authorized payment plan arrangement (tuition installment plan) has been executed by the student at time of registration. See Appendix B for more details. Stopping payment on a check tendered in payment of tuition and fees does not relieve the student of financial responsibility for incurred tuition and fee charges. To ensure that the student's financial record reflects the correct charges, the student is responsible for officially dropping or adding courses in MyMC or in-person at the Office of Admissions and Records.

If a third party such as, but not limited to, a federal, state, or municipal government agency agrees to pay a student's tuition and fees, the student is not relieved of his or her primary responsibility. If such a third party fails to honor its agreement, the College reserves the right to bill the student directly.

Outstanding financial balances must be paid before future registration is permitted or certifications, diplomas, or transcripts are issued.

Payment of Tuition and Fees

The Cashier's Office will accept all forms of payment (cash, check, money order, credit card, or debit card). Checks and money orders must be made payable to Montgomery College for the exact amount of tuition and fees. The College accepts VISA, MasterCard, American Express, and Discover credit or debit cards in payment of tuition and fees in person and online. Tuition and fees are to be paid in full upon registration with the exception of the installment plans. See Appendix B for more details.

Tuition and Fees Installment Program

Information on paying tuition and fees by installment plan can be found at *www.montgomerycollege.edu/creditcost.*

Refunds

The effective date for withdrawal will be the date that the student successfully drops the class online or in-person at the Office of Admissions and Records. The refund deadline date for each course section is noted in MyMC. All refunds are payable to the student of record. Montgomery College can refund a student electronically to the student's bank account or credit card. Refunds can also be paid by check.

The refund policy is as follows:

- For courses cancelled by the College: 100 percent refund of tuition, consolidated fee, major facilities reserve fee, applied music fee, and technology fee.
- For courses dropped by the student by the published deadline date (listed on the student schedule/invoice): 100 percent refund of tuition, consolidated fee, major facilities reserve fund fee, applied music fee, and technology fee.
- For students involuntarily withdrawing from the College: (1) Under certain circumstances, refunds of tuition only (fees are nonrefundable after published refund date) will be prorated based on the total amount of expired course time after the first week of classes (see the section on involuntary withdrawal in Appendix C for details). (2) For military personnel called to active duty or being transferred because of related troop movements, a 100 percent refund of tuition and fees will be provided for the semester within which the effective date of withdrawal falls (see Appendix C).

Treatment of Title IV Funds When Students Withdraw

Students who are awarded Title IV financial aid must earn their aid by attending classes. When students completely withdraw from school or stop attending school during a semester, the school must follow rules established by the federal government to determine the amount of financial aid earned.

- When students receive more Title IV funds than they have earned, the unearned portion must be returned to program accounts. This may result in students owing money to either the College or the federal government.
- When students have not received all of their earned Title IV funds, they may still receive disbursement of this aid.

Title IV funds include the following programs: Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, D.C. Leveraging Educational Assistance Program, Federal Perkins Loans, Federal Stafford Loans (subsidized and unsubsidized), and Federal Parent Loans for Undergraduate Students (PLUS). Examples of how this policy is applied are available at the Office of Student Financial Aid at each campus.

Textbooks and Supplies

Textbooks and course-related supplies are not included in tuition and fees. All required books and supplies should be purchased before the first day of classes. Books and supplies cost approximately $60–$200 per course and can be purchased from the bookstore on the campus where the course is taught or online two weeks before the start of classes. Students should check the booklist posted in each store or on the MC Books & More website, *www.montgomerycollege.edu/bookstore.*

Financial Aid

The Montgomery College student financial aid program is structured to meet the College's philosophy that no student should be restricted from attending because of limited financial resources. Financial aid programs include grants, scholarships, loans, and student employment. An Office of Student Financial Aid is located on each campus.

Contact Information:
240-567-5100
financialaid@montgomerycollege.edu

Definition of Financial Need

Financial need is defined as the difference between estimated student expenses at Montgomery College and the expected family contribution. When the expected family contribution exceeds the student's estimated expenses, the student has no financial need. The College determines financial need by using the federal methodology. The amount of aid awarded cannot exceed the financial need of the student. The College offers several scholarships, loans, and work programs where financial need is not required. For further information, contact the Office of Student Financial Aid.

Eligible Programs

Students should check with the Office of Student Financial Aid to determine which degree or certificate programs are eligible for assistance. Currently, students enrolled in the following programs are *not eligible* for financial aid: all letter of recognition programs; specialized art certificate; electronic photography certificate; photographic techniques certificate; portrait, fashion, and photojournalism certificate; undeclared certificates requiring fewer than 16 credit hours; and old degree programs not in the current catalog.

New certificates may not yet be approved for eligibility; please contact the Office of Student Financial Aid to confirm the eligibility status of any program not listed here.

Financial Aid Procedures

Application forms for financial aid are available January 1 for the following academic year, and it is highly recommended that all students apply for assistance as early as possible.

For priority consideration, the Free Application for Federal Student Aid (FAFSA) should be completed and submitted no later than May 15 for the fall and spring semesters, or November 1 for the spring semester only.

To expedite processing, students are encouraged to file the FAFSA online at *www.fafsa.gov.* Students should list Montgomery College (Title IV code 006911) on the FAFSA as the first-choice college for the academic year. Students should read the directions for the application carefully and complete it accurately. For questions about the FAFSA, contact the Office of Student Financial Aid. Additional information about federal student assistance programs and the FAFSA is available at *www.studentaid.ed.gov.*

Students applying for Maryland state financial assistance must complete the FAFSA. It must be received by the federal processor or submitted online by March 1 to receive maximum consideration for Maryland state aid.

After the campus financial aid counselor receives the required forms, along with the appropriate documentation to verify the information reported, the counselor will determine whether the student is eligible for aid and which financial resources are available. The financial aid office will then notify the student of the award(s).

A student who files an application for financial aid in accordance with the above instructions and the policies adopted by the College will be considered for all types of financial aid programs for which he or she may be eligible if funds are available.

Financial Aid Appeals

The College has established an appeals process for students who feel that their financial aid application was not given proper consideration.

1. The student should request a review conference with a financial aid counselor.
2. If the student disagrees with the decision of the counselor, the student may appeal the decision in writing to the campus director of student financial aid, who will render a written decision.
3. An appeal may be presented to the Financial Aid Professional Judgment Committee for final decision.

Satisfactory Academic Progress

Students applying for financial aid and those who are awarded financial aid are required to make satisfactory academic progress as defined in the Montgomery College Office of Student Financial Aid Standards of Satisfactory Academic Progress. The policy is available in any campus financial aid office or online at *www.montgomerycollege.edu/heoa.*

Grants and Scholarships

Conditions and characteristics of all federal and state programs described below are subject to change without notice. Individual departments and organizations offer many other scholarships and awards, which are announced periodically.

Board of Trustees Scholarship—Academic Potential

The Board of Trustees awards a scholarship to one graduating student from each Montgomery County public high school based on academic potential demonstrated in high school. The scholarship may cover county tuition and fees for up to 15 hours per semester for one year only, pending available funding. The student must be nominated by the high school and then approved by the Admissions and Records Office and the Office of Student Financial Aid. A limited number of second-year awards may be available pending sufficient funding.

Board of Trustees Scholarship—Academic Specialty

The Board of Trustees awards approximately 100 scholarships based on academic specialty to graduating Montgomery County high school students who have demonstrated academic potential. The scholarship may cover up to 15 hours per semester of county tuition and fees for the first academic year depending on available funding. Applications are available from the Office of Admissions and Records and the Office of Student Financial Aid. A limited number of second-year awards may be available pending sufficient funding.

Board of Trustees Student Tuition Grants—Need Based

The College's Board of Trustees established a tuition grant program to assist students with financial need, particularly those who qualify for little or no federal grant money. Students must maintain at least a 2.0 cumulative grade point average to continue receiving this grant. Applicants must follow the previously explained steps for applying for aid, must demonstrate academic potential, and must have financial need as defined by the College.

The Board of Trustees grants are generally available to full-time and part-time students who demonstrate financial need based on available funding. The amount of the grant is also based on availability of funds.

Federal Pell Grant

Undergraduate students attending an institution of higher education may be eligible for a Federal Pell Grant of up to $5,645 (2013-14 figures) per year, based on the number of credits enrolled and the cost of education at the College and based on availability of funds.

Eligibility is determined on a yearly basis, and it is the student's responsibility to reapply each year. Eligible students must be in a program that is at least one year long and leading to a degree or certificate, and the

students must demonstrate financial need. Students may be enrolled on a full-time (12 or more credit hours), three-quarter-time (9–11 credit hours), or half-time (minimum 6–8 credit hours) basis. Students enrolled for fewer than 6 credit hours may be eligible if they have a maximum need factor. The amount of the grant to which a student is entitled under this act in any academic year is determined annually by Congress. Application is accomplished by completing the FAFSA.

Federal Supplemental Educational Opportunity Grant

Students who demonstrate exceptional financial need may be eligible for a Federal Supplemental Educational Opportunity Grant (FSEOG) based on availability of funds. Preference is given to Pell-eligible students who have exceptional financial need. Students apply for the FSEOG by completing the FAFSA. Students must reapply every year.

Federal TEACH Grant

The Federal Teacher Education Assistance for College and Higher Education (TEACH) Grant Program provides non-need-based grants of up to $4,000 per year, based on availability of funds, to students who intend to teach in a high-need field in a public or private elementary or secondary school that serves students from low-income families. Students must complete the FAFSA, be U.S. citizens or eligible noncitizens, meet all other requirements for federal financial aid, and enroll at the College in teacher education transfer programs in mathematics (605), physics (603), or Spanish (602). These are the only programs approved by the U.S. Department of Education for TEACH Grants at Montgomery College. Other qualifying criteria apply; please see a campus financial aid office for additional information. This grant requires a four year teaching service commitment for any amount of grant a student may receive. If students receive a TEACH Grant but do not complete the required teaching service, they are required to repay the grant as a federal unsubsidized Stafford Loan, with interest charged from the date of each TEACH Grant disbursement.

Montgomery College Foundation Scholarships

Many organizations, businesses, and individuals make generous gifts to the Montgomery College Foundation, which fund the scholarships that help Montgomery College students achieve their educational goals. Qualifications for each scholarship vary according to criteria established by the donors. One application entitles a student to be considered for all scholarships for which he or she may be qualified. To obtain the Montgomery College Foundation Scholarship please visit *www.montgomerycollege.edu/finaid.*

Special Programs for High School Students

Students currently enrolled in high school and taking classes at the College may apply for the following need-based grants:

Montgomery College Board of Trustees High School Grant. This grant can be used to pay for the cost of Montgomery College tuition and fees for one three-credit-hour class per semester. Students who are currently homeschooled are eligible for this grant.

Concurrent Enrollment Grant. Applicants must be Montgomery County Public School students enrolled at the College through the Office of Concurrent Enrollment Programs. This grant pays for Montgomery College tuition and fees as well as a book allowance that is determined by the scholarship coordinator. The maximum grant per student depends on financial need and available funds.

Current high school students must complete the Montgomery College High School Grant Application, available at campus financial aid offices or on the web at *www.montgomerycollege.edu/finaid.*

Loans

Direct PLUS Loans

Parents of undergraduate students may borrow in the Federal Parent Loans for Undergraduate Students (PLUS) Program. Parents may borrow up to the entire cost (minus any aid) of the attending College per student. Repayment will begin 60 days after disbursement.

Federal Perkins Loans

The Federal Perkins Loans are low-interest (5 percent) loans designed to help students pay for their education. A student may borrow up to a total of $8,000 for the equivalent of the first two years of a four-year degree program while attending the College, provided that he or she has not received loan funds from another institution and meets the following eligibility criteria:

- The student must demonstrate exceptional financial need in order to receive first priority for a Federal Perkins Loan.
- The student must have been accepted for enrollment as an undergraduate at the College in an eligible degree or certificate program.
- The student must not be in default on any federal Title IV loan or owe a refund on any federal Title IV grant which may have been received at any postsecondary educational institution as evidenced by the National Student Loan Data System.
- The student must maintain satisfactory academic progress according to the standards listed in the College's financial aid packet.

Before Federal Perkins Loan funds are issued, the student must complete a Master Promissory Note. Students are given specific instructions on how and when this procedure will take place.

- Repayment begins nine months after the student drops below half-time status (six credit hours) or leaves school for other reasons.
- During the repayment period, five percent interest will be charged on the unpaid principal balance. The amount of repayment depends on the size of debt. Check *www.montgomerycollege.edu/finaid* after July 1, 2012 for changes to the Perkins Loan Program.
- Upon leaving the institution, the student will be notified of the exit interview process and given specific payment schedule information.
- A description of the various loan deferment, forebearance, and cancellation options is provided on the loan promissory note and issued to the student.

Check *www.montgomerycollege.edu/finaid* after July 1, 2012 for changes to the Perkins loan program.

Direct Subsidized Loan/Direct Unsubsidized Loan

The Direct Subsidized Loan Program is part of the William D. Ford Federal Direct Loan Program. The loans are borrowed directly from the federal government. The undergraduate student borrower must be a U.S. citizen or permanent resident, have financial need, and maintain satisfactory academic progress. The student must be enrolled for at least six credit hours in each semester.

The Direct Unsubsidized Loan is not based on financial need, but all students must file a FAFSA to apply for a loan. The amount students may borrow depends on their eligibility for the Direct Subsidized Loan Program and their dependency status. Dependent students may borrow $5,500 as a freshman and $6,500 as a sophomore, and independent students may borrow $9,500 as a freshman and $10,500 as a sophomore. These annual maximum loan amounts are a combination of both the subsidized and unsubsidized loan programs.

Students should expect fees to be deducted from the loan proceeds by these programs for loan origination. The amount of these fees varies depending on the amount borrowed. All first-time borrowers at Montgomery College must complete an

in person financial literacy session before receiving any loan proceeds. All students who borrow under these programs must complete an exit interview when they drop below half-time enrollment (six credit hours) in a semester.

Direct Subsidized Loan and Direct Unsubsidized Loan repayment begins six months after the student ceases to be at least a half-time student in an eligible program. Interest accrues during this six month grace period for any new Direct Subsidized Loans disbursed on or after July 1, 2012. The minimum repayment is $50 per month, and the interest rate varies. The actual amount and length of the repayment period are determined by the U.S. Department of Education and the borrower.

The Direct Unsubsidized Loan principal may be deferred while the student is in school. Interest must be paid while the borrower is in school, during deferment, and during grace periods, according to the repayment schedule. The Direct Unsubsidized Loan interest can be paid according to a payment schedule or be accrued and added to the principal while the student is enrolled for at least six credit hours in a semester.

Student Employment

College Student Assistantship Program

Each year a number of qualified students receive approval to work on the College campuses as student assistants. Special emphasis is placed on skills, grade point average, relevancy to field of study, and the hiring unit's needs. To learn about available jobs, students should check individual departments and check the MC ejobs website through MyMC.

Federal Work Study Program

Federal Work Study (FWS) employment may be awarded to students who

- complete the FAFSA and have demonstrated financial need,
- are in need of employment in order to pursue a course of study at this College, and
- are capable of maintaining good academic standing in the course of study while employed.

Under the FWS program at the College, students usually work an average of 15 hours per week during the school year. Summer employment is also available. Interested students should see the student employment specialist in the campus financial aid office and check the MC ejobs website through MyMC.

Veterans Benefits—*See Military Services on page 53*

DC Tuition Assistance Grant (DCTAG) Program

DC residents must use the DC Office of the State Superintendent's DC OneApp to apply for this grant. The DC OneApp is the single access to the District of Columbia's major grant program, the DC Tuition Assistance Grant Program.

This application is only available online. Students should apply and submit required documentation before June 30 each year or they will be placed on a waitlist. However, it must be noted that funds are extremely limited and early application submission is strongly encouraged. The DC Office of the State Superintendent may change the application deadline annually.

These awards are for current residents of Washington, D.C., and who have lived in the District of Columbia for at least 12 months prior to beginning their first year in college. Students must be high school graduates or GED recipients, 24 years of age or younger before the application deadline, accepted for enrollment in—or working toward—a first-time undergraduate degree, and maintain at least half-time enrollment status (six credit hours per semester) in order to receive $1,250 per semester. The award amount varies by students' credit hour enrollment.

Further details can be found on *https://dconeapp.dc.gov* or by calling the D.C. Office of the State Superintendent (OSSE) at 202-727-2824.

Maryland State Student Financial Assistance

The General Assembly of the State of Maryland created several scholarship and grant programs to help those who need financial assistance for a college education. The Maryland State Office of Student Financial Assistance awards various categories of scholarships for which Montgomery College students are eligible to apply. Additional information on Maryland state programs is available at the website *www.mhec.state.md.us/financialaid*.

Educational Excellence Awards

Howard P. Rawlings Educational Assistance Grant. These awards are made by the Maryland State Office of Student Financial Assistance. All recipients must demonstrate a suitable level of financial need each year for new or renewal awards. Awards ranging from $400 to $3,000 can be given only to fulltime students at the College who are enrolled in a degree or certificate program. Students must file a FAFSA by March 1 each year.

Guaranteed Access Grant. The state's neediest students are guaranteed access to postsecondary education in Maryland through this program if they meet the program criteria. All applicants must file both a FAFSA and a Guaranteed Access Grant application directly with the State Office of Student Financial Assistance by March 1 of the year they plan to attend the College. Students may also apply during their first year in college. Grants range from $400 to $15,500 per year.

Maryland Part-Time Student Grant Program. These scholarships, which are need-based, can be awarded to part-time students who are enrolled in degree-granting programs for 3–11 credit hours each semester. Awards range from a minimum annual award of $200 to $2,000. Students apply for this program by filing the FAFSA.

Legislative Scholarships

House of Delegates Scholarship. Each state delegate may award scholarships to residents of his or her election district. Recipients may receive a one-year award ranging in value from $200 to $9,000. The award may be offered each year for up to four years at the discretion of the delegate. Awards are not automatically renewed. Students interested in these scholarships should contact the delegate representing their election districts.

Senatorial Scholarship. Each state senator has an annual quota of scholarship units which are awarded to residents of his or her senatorial district or subdistrict. Recipients of this scholarship may attend the College either full or part time. Awards range from $400 to $9,000 per year. Students must file the FAFSA by March 1 for initial consideration. Awards are renewable for up to three years at the College.

Unique Populations

Edward T. Conroy Memorial Scholarship Program. This award is not based on need. You must be a MD resident and you must be: the son or daughter of a member of the United States Armed Forces who died as a result of military service, or who suffered a service-connected 100 percent permanent disability as result of military service, a veteran who suffers a service-connected disability of 25 percent or greater as a result of military service, and has exhausted or is no longer eligible for federal veterans' educational benefits; the son, daughter, or surviving spouse of a victim of the September 11, 2001 terrorist attacks who died as a result of the attacks on the World Trade Center in New York City, the attack on the Pentagon in Virginia, or the crash of United Airlines Flight 93 in Pennsylvania; a POW/MIA of the Vietnam Conflict or his/her son or daughter; the son, daughter or surviving spouse (who has not remarried) of a state or local public safety employee or volunteer who died in the line of duty or who was 100 percent disabled in the line of duty; or a state or local public safety employee or volunteer who was 100 percent disabled in the line of duty. The amount of your

award may be equal to your tuition and fees, but the total dollar amount may not exceed $9,000, whichever is less. Contact any campus financial aid office after April 1 for applications and submit them before July 15th.

Veterans of the Afghanistan and Iraq Conflicts Scholarship Program. The Veterans of the Afghanistan and Iraq Conflicts Scholarship Program is designed to provide financial assistance to United States armed forces personnel who served in the Afghanistan or Iraq Conflicts, and their sons, daughters, or spouses who are current high school seniors, and full-time and part-time, degree-seeking undergraduate students enrolled in an eligible accredited Maryland postsecondary institution. Applicants for the scholarship must submit the Veterans of the Afghanistan and Iraq Conflicts Scholarship application, by March 1, online at *https://mdcaps.mhec.state.md.us*. Students must also file a FAFSA by March 1 to be considered for the award at *www.fafsa.gov.*

Workforce Shortage Student Assistance Grant Program. The program is for students who plan on working in specific career/occupational programs upon graduation. Eligible fields include: child care, human services, teaching, nursing, physical and occupational therapy, social work, and public service. Current high school seniors, full-time and part-time, degree-seeking undergraduate and graduate students enrolled in an eligible accredited Maryland postsecondary institution are eligible to apply. Complete the WSSAG application online at *https://mdcaps.mhec.state.md.us*. To be considered based on need, students must file the Free Application for Federal Student Aid (FAFSA) at *www.fafsa.gov* for the application year. The FAFSA is not required; however, it will be used to determine the order in which students will be awarded. Certain majors may require additional documentation, which will be noted on the application. File the WSSAG application by July 1.

Additional criteria for all awards listed can be found on *http://www.mhec.state.md.us/financialaid/descriptions.asp.*

Services for Students

Academic Support

Counselors and other professionals on all campuses offer academic skills workshops, counseling, tutoring, and other programs to help students improve skills in studying, test-taking, overcoming math anxiety, and time management. Services are available in a variety of learning centers at each campus.

Adult Learners

Montgomery College Adult Learner programs provide a variety of resources for the College's ever-growing adult student population. Our adult student services connect students with people and offices that provide services and programs for this unique population. The programs cater to all adult students—individuals entering Montgomery College who have never attended college and adult students now returning to college. Each of the three campuses offers individualized academic advising and counseling services targeted to adult students interested in taking courses for college credit. In addition, each campus has a financial aid office and tutoring centers and offers adult-focused academic, social, and informational workshops and programs.

For information regarding a specific campus, please contact the appropriate office listed below:

Germantown: M.C.-P.A.S.S., 240-567-6976, *goal@montgomerycollege.edu*

Rockville: Counseling and Advising Department, 240-567-5063

Takoma Park/Silver Spring: Counseling Department: 240-567-1480, Director of Evening/Weekend office: 240-567-3904

Montgomery College's Workforce Development & Continuing Education office also offers noncredit courses (including Adult ESOL and Literacy-GED) as well as college credit courses and business training in convenient community locations. More information can be obtained by calling 240-567-5188.

Assessment

Students must demonstrate their skills in English, reading, and mathematics upon admission to the College so they may be placed in courses matching their academic skill levels. Students may be exempt from assessment if they can provide documentation that they have completed appropriate college coursework or have sufficiently high scores on standardized test instruments such as the SAT, ACT, or TOEFL. If such documentation is not available, students must take the college placement examination. The assessment center on each campus provides this testing to students. The centers also provide testing services for students who need to take make-up examinations, those enrolled in Distance Education courses, and students with disabilities who need special accommodations.

Athletics

Montgomery College offers a variety of intercollegiate and intramural sports. The College belongs to the National Junior College Athletic Association (NJCAA), Region XX, and the Maryland Junior College Athletic Association (JUCO).

Bookstores

The College operates MC Books & More, the official Montgomery College bookstore, on all three campuses and the Cafritz Art Store & More in The Morris and Gwendolyn Cafritz Foundation Arts Center. New and used textbooks, rentals, ebooks, and additional classroom materials are available in the stores. Our website also features online sales of textbooks that are available for delivery to your home or for pick-up at your campus store. Hours of operation are scheduled to meet the needs of each campus and are

extended at the beginning of each semester. Regular days of operation are Monday through Saturday. Please visit the MC Books & More website for hours of operation.

Each store offers reference books, study guides, bargain books, and best-sellers. Books still in print may be special ordered. Other merchandise is available, such as software, art materials, school supplies, medical and laboratory supplies, and calculators. Textbook buyback takes place at the end of each semester. Visit the buyback link on our website for details.

Montgomery College clothing and memorabilia, an assortment of greeting cards, balloons, gifts, and snacks are available in all stores. Gift-wrapping services, gift cards, and order information on class rings and nursing pins are also available.

Students may visit the MC Books & More website to research all services available, to view course material and textbook selections, and to place orders online. For more information, to access these services, or to contact MC Books & More staff, *www.montgomerycollege.edu/bookstore*.

Career/Transfer Centers

Career development resources and information about transfer to four-year colleges and universities are available at all three campuses. Students are assisted in locating the specific resources they need to choose a major and explore career fields, job opportunities, and educational programs at transfer institutions.

Career development resources include planning guides, self-assessment inventories, occupational information, and computerized career guidance programs. Courses and workshops help students assess their skills, interests, and values, and through these assessments students can learn about practical issues related to the job search, such as writing a résumé and interviewing.

Representatives from many colleges and universities regularly visit the College to talk with prospective transfer students about programs and scholarships, and workshops are offered each semester on transfer-related topics.

Career and transfer centers are available at the following locations:

Germantown: 172 SA, located with Counseling and Advising

Rockville: 219 CB

Takoma Park/Silver Spring: 205 RC

Child Care: Early Learning Centers

Convenient, affordable, high-quality child care and early childhood education programming are available on all three College campuses. Our nationally accredited programs for children ages two and a half to five years offer half- and full-day options; excellent teacher/child ratios; a hands-on, developmental curriculum; a comfortable play/learning environment; and enrichment programs. A limited number of tuition scholarships are available.

The Rockville Early Learning Center also operates a Head Start Program for income-eligible 3–4-year-old children. Before- and after-school care is available for children up to kindergarten age at the Rockville Campus on a space-available basis.

Each Early Learning Center is open Monday through Friday from 7 a.m. to 6 p.m. Students and College employees may enroll children at the center with priority registration and special discounted rates. Centers are also open to the community as space is available. For more information visit the Early Learning Center webpage at *www.montgomerycollege.edu/childcare*.

Counseling and Advising

Academic advising is an educational process that facilitates students' understanding of the meaning and purpose of higher education and fosters their intellectual and personal development toward academic success and lifelong learning. Students and their counselors or faculty advisers are partners in meeting the essential learning outcomes, ensuring student academic success, and outlining the steps for achievement of the students' personal, academic, and career goals.

Counselors and faculty advisers help students make long- and short-term academic plans. They assist students in planning to complete certificates or degrees from the College and in preparing to transfer to four-year colleges and universities. Counselors also listen to students' concerns and offer advice. They can connect them with community services, if necessary, or assist them in crisis and other critical situations. Counselors help students in making educational, transfer, and career decisions and in planning for and progressing toward their individual goals.

Faculty advisers assist students in identifying useful elective courses for any declared majors, make referrals to academic support services, recommend out-of-class activities and experiences to enhance learning or career development, and educate students about academic honor or professional associations. Faculty advisers also assist students in pre-registering for academic courses in their major.

Students are encouraged to seek counseling and advising services throughout the academic year, instead of only during registration periods. Students who see the same counselor or adviser during their enrollment at the College benefit by setting clear academic goals that are reviewed periodically.

Counseling and Advising Locations

Students may visit the Counseling and Advising Center on any campus (Germantown, 172 Sciences and Applied Studies Building; Rockville, 215 Counseling and Advising Building; Takoma Park/Silver Spring, 122 Student Services Center) for walk-in assistance or to make an appointment for a specific need. Hours vary, but all centers have some evening and weekend hours. Counselors are also available for e-mail advising. Visit the website at *www.montgomerycollege.edu/departments/studev/counselingandadvising.html* for telephone and e-mail contact information for counselors and advisers on each campus as well as much more information about student services programs and services.

Student Development (STSU) Courses

Counselors teach courses that ease the transition to college and provide tools for developing academic and life skills.

Student Development courses are designed to meet the diverse academic needs and interests of students. Courses to help with the transition to college include First Year Seminar (STSU 100) and Seminar for International Students (STSU 101). These two courses in particular are an important component of the First Year Experience activities, and all first-time college students are strongly encouraged to take one of these courses. Courses in Study Habits Development (STSU 110), Memory Development (STSU 114), and Building Math Confidence (STSU 112) focus on building skills. Career Development: Dynamics and Application (STSU 120) covers how to choose, plan, establish, or change career fields. Success Group (STSU 122) helps students who have a history of academic and personal issues develop behavioral strategies to improve overall success.

Disability Support Services

In accordance with the provisions of the Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973, the College provides accommodations, access to facilities, programs, activities, and services for qualified students with documented disabilities. Accommodations are determined on a case by case analysis, based on information provided by a qualified professional.

Disability Support Services (DSS) counselors advise students and provide academic, career, and personal counseling. They determine and facilitate appropriate academic and technological accommodations, act as liaisons with College resources and external agencies and consultants, and provide referral services for students with disabilities. DSS faculty and staff assist in arranging support services within the framework of student self-determination and self-advocacy.

Eligibility and Services

Students must submit documentation to the DSS office from an appropriate professional to verify the presence and impact of a disability. Students are responsible for the cost of this verification. DSS counselors certify eligibility for services and meet with students to determine academic adjustments and/or accommodations. Each campus offers assistive technology, including computers with disability-specific software and hardware, voice recognition and synthesizers, print magnifiers and scanners, large print, and Braille as well as individual tutorial support.

Arranging for Services

New students and returning students requesting support services and/or accommodations need to submit a Request for Services Form to a DSS counselor at the campus they plan to attend at least three weeks before the beginning of each semester. In addition, students at any campus requesting sign language interpreter must contact the Rockville DSS Office. Students must also have an interview with a DSS counselor on their campus, complete assessment testing, select courses, and register six weeks prior to the start of classes. This timeline must be followed to allow enough time to allow DSS counselors to advise about appropriate course placement and arrange interpreter services. Failure to meet the deadline may delay services, possibly until the next semester.

For more information and application materials, please contact the appropriate DSS Office:

Germantown: 175 SA, 240-567-7770

Rockville: 122 CB, 240-567-5058

Takoma Park/Silver Spring: 122 ST, 240-567-1480

More information and all application materials are available for printing at the website: *www.montgomerycollege.edu/dss.*

First Year Experience

All first-time students are encouraged to participate in the College's First Year Experience (FYE) program. This includes the Montgomery Advising Program (MAP) or International Montgomery Advising Program (IMAP) sessions, offered either in person or online (as eMAPs) by the Counseling and Advising departments. In addition to New Student Orientation, offered before every semester, the centerpiece of the FYE program is the FYE course, STSU 100 First Year Seminar.

The FYE Program will help new students learn the expectations for a college student and the skills to enhance their potential for success, time management, successful studying, and the development of an individualized education plan. They will learn about the higher education system, the purpose of general education, personal development, and career planning.

For more information, visit *www.montgomerycollege.edu/fye*.

Food Services

CaféMC locations and vending machines on each campus offer a variety of food, snacks, and beverages. In addition, MC Munchies & More snack shops are located on the Rockville and Takoma Park/Silver Spring campuses. For more information on CaféMC operating hours and menu offerings, visit the website *www.montgomerycollege.edu/food*. For MC Munchies & More locations and hours, visit *www.montgomerycollege.edu/munchies*. For vending machine locations, visit *www.montgomerycollege.edu/vending*.

Housing

Students are responsible for their own living accommodations. The College does not approve or maintain housing facilities.

International and Multicultural Students

Counselors on each campus advise international and multicultural students from diverse cultures, including a wide range of ethnic, geographic, and language backgrounds. Students whose first language is not English can obtain specialized counseling and academic advising throughout the year. Orientation and special activities programming are offered.

For more information, please visit the Center for International and Multicultural Students at Germantown (150 Sciences and Applied Studies Building) or the Counseling and Advising departments at Rockville and Takoma Park/Silver Spring (Rockville, 215 Counseling and Advising Building; Takoma Park/Silver Spring, 122 Student Services Center).

Libraries

Montgomery College Libraries provide a variety of information resources to support the curricula of the College. The Libraries are composed of four locations housed on the three campuses including the Rockville Campus Library, the Takoma Park/Silver Spring Campus Library, with two locations with the main library on the East Campus and the Cafritz Art Library on the West Campus, and the Germantown Campus Library. With over 225,000 volumes held the MC Libraries print collections cover all disciplines including arts, humanities, social sciences, health sciences, business, computing, biotechnology and multicultural resources. Each campus location collections are also focused by subject area with Germantown collecting in Biomedical, Technology and Bioscience, Rockville collecting in Business, Humanities, and Theatre, Takoma Park/Silver Spring collecting in Allied Health and Nursing and the Cafritz Art Library collecting in Fine Arts. The Libraries also offer access to tens of thousands of e-books, e-journals and streaming media titles covering all subject areas and over 130 academic databases to assist with coursework, including databases that contain full-text articles. Access to all resources, including books, e-books, journals and media are found via the online Catalog and Libraries' website at cms.montgomerycollege.edu/libraries.

Patrons with a valid student identification card or a community borrower's card may check out circulating materials for use outside of the libraries. Students registered for the current semester may also use the Libraries' electronic resources, including e-books, e-journals, and electronic course reserves from outside the libraries, via the Internet. Audiovisual materials may also be viewed online or at one of the Libraries' locations. Audiovisual materials are available to faculty for classroom instruction. The Libraries maintain numerous computer workstations for College and community patrons to use. A knowledgeable, professional staff is available to assist students with research, homework assignments and access to the Libraries' resources.

Interlibrary Loan (ILL) service is available to provide resources that the College does not own. The Libraries also offer an Inter-Campus Loan (ICL) service to deliver resources from one campus location to another. Assistive technologies are available for patrons with special needs. For more information, please visit the Montgomery College Libraries website (cms.montgomerycollege.edu/libraries) or call one of the campus locations:

Germantown: 240-567-7853; 240-567-7858

Rockville: 240-567-7117; 240-567-7130

Takoma Park/Silver Spring: 240-567-1540; 240-567-1536
Cafritz Art Library 240-567-5813; 240-567-5867

Special Collections

The MC Libraries maintain a select collection of historical materials and memorabilia related to the history of the College. Any request or information about these materials may be sent to librarian, Shelly Jablonski, at 240-567-7174.

Military and Veteran Services

Montgomery College is a military- and veteran-friendly institution, recognizing and supporting the contributions that our students make outside the classroom as active duty servicemembers, guardsmen, reservists, veterans, and dependents. To that end, the College assists the military community in reaching their educational goals by providing:

- Flexible withdrawal procedures in the event of activation, deployment, or enlistment,
- Waived residency requirements for active duty servicemembers and dependents,
- Flexible residency requirements for those affected by Base Realignment and Closures,
- Veterans Benefits processing,
- Tuition Assistance processing,
- Tuition Waivers for Maryland National Guardsmen,
- Servicemembers Opportunity College Student Agreements,
- Support to the Education Offices at Walter Reed National Military Medical Center, and
- Support services available through the Combat2College program (see below).

Combat2College

Combat2College is a nationally recognized program that offers opportunities and services to veterans and servicemembers attending Montgomery College. Some of the program features include:

- Academic opportunities and advising,
- Wellness activities,
- Clubs for student veterans and other social opportunities,
- Space for gathering, and
- Referral and coordination with external agencies/resources.

For more information, visit *www.montgomerycollege.edu/combat2college.*

Veterans Affairs Office

The Veterans Affairs Office (VAO) was established to assist all students applying for Department of Veterans Affairs (DVA) educational benefits. To contact the office, e-mail *va@montgomerycollege.edu*. Students eligible to receive benefits must submit a Certification Request for VA Benefits form, available at *www.montgomerycollege.edu/admissions/StudentForms/StudentForms.htm* to the Office of Admissions and Records or to *va@montgomerycollege.edu* each semester after completing registration to have their enrollment certifications submitted to the DVA. Students receiving benefits must contact *va@montgomerycollege.edu* regarding any changes in enrollment. For more information, visit *www.montgomerycollege.edu/admissions/veb.*

Parking and Motor Vehicle Registration

Each person associated with the College who parks a vehicle on any campus of the College or any property owned, leased, maintained, or operated by the College must register the vehicle regardless of its ownership. Students, faculty, staff, and visitors must abide by College traffic regulations. The College reserves the right to issue a citation or to tow, at the owner's risk and expense, any unregistered vehicle parked in violation. Information about vehicle registration and parking is available online at *www.montgomerycollege.edu/parking.* The *Montgomery College Motor Vehicle Regulations* are available online at *www.montgomerycollege.edu/verified.*

Printing at MC

A kiosk style, pay-for-print system is in place at the College. Our kiosks currently use the WEPA cloud printing solution, and are located on each campus in the libraries, labs, and learning centers. To use these kiosks, you will need to create a WEPA account. The best way to pay for these copies is to pre-load your account with a minimum of $5 as funds to be drawn from for each print you request. Other payment options are also available. Visit the Printing at MC website for FAQs, tutorials, pricing, and other information: *www.montgomerycollege.edu/printing*. For other printing solutions, the Rockville Campus and the Takoma Park/Silver Spring Campus

have retail operations called MC Copies & More. Services include printing, desktop publishing, photocopying, scanning, poster printing, button making, binding, laminating, and more! MC Copies & More is located inside MC Books & More (the Montgomery College bookstore) on those two campuses. For price guide and hours visit *http://cms.montgomerycollege.edu/copies*.

Safety and Security Services

Montgomery College is committed to providing a safe and secure environment at all times that will support and enhance the institution's educational programs and services. The Office of Safety and Security is responsible for the protection of the College community, first aid, emergency assistance, 24-hour escort service (upon request), maintenance of automated external defibrillators (AEDs), enforcement of campus parking regulations, and the lost and found service. Officers on each campus are on duty 24 hours a day, 7 days a week. In compliance with the Crime Awareness and Campus Security Act of 1990, the College's campus security procedures are provided online in the Montgomery College Annual Security Report at *www.montgomerycollege.edu/verified* or *www.montgomerycollege.edu/emergency*. Click on the Annual Security Report.

Safety and Security Office Locations

Germantown Campus: 282 SA, 240-567-7777 (recorded line)

Rockville: 101 CB, 240-567-5111 (recorded line)

Takoma Park/Silver Spring: 117 ST, 240-567-1600 (recorded line)

Emergencies

In case of a life-threatening emergency, someone should call 9-1-1 and then notify Safety and Security. Students and employees are encouraged to carry a cell phone for reporting emergencies and receiving county and College alerts. Emergency phones are located in all campus elevators and in numerous internal and external locations. These phones will automatically ring in the nearest Office of Safety and Security. Calls made on the emergency phones are recorded. From off-campus locations, call 9-1-1 and then notify the appropriate College administrator.

As an added safety measure, automated external defibrillators are available in every building on each campus. They are mounted in cabinets on the wall in the main lobby/entry area. A local alarm will sound when the cabinet is opened. Security officers also have portable units.

Emergency Preparedness

In the event of emergency situations involving Montgomery College directly—or if an emergency occurs at the local, regional, or national level that could impact the college community—Montgomery College's safety and security personnel and other College officials utilize in-house emergency response plans and coordinate their response activities with local, county, state, and federal authorities, as appropriate. The College works directly in conjunction with Montgomery County's Office of Emergency Management and Homeland Security, in the event of any local activation of the county's Emergency Operations Center.

Additional information, including emergency evacuation area maps, is available at *www.montgomerycollege.edu/emergency*.

Student Employment Services

The purpose of Student Employment Services is to teach currently enrolled students and recent graduates the skills that they need to become successfully employed, to assist students in matching their career or job goals to employment openings (current or future) to ultimately obtain employment, and to successfully place students into cooperative education and internship experiences that are related to their majors. Employment services include

- individual assistance with résumé writing, cover letter preparation, interview skills, job readiness, and job search skills;
- job readiness workshops (résumé preparation, interviewing techniques, etc.);

- job listings for full-time, part-time, and temporary employment opportunities;
- internship information and referral;
- employer on-campus recruitment, part-time job fairs, and annual career information job fairs;
- online job search resources; and
- résumé writing and federal employment application software programs.

Employment information and resources are located in the Germantown and Takoma Park/Silver Spring Career/Transfer Centers and in 019 Campus Center on the Rockville Campus. A job opportunity coordinator is available on each campus to work with students on an individual basis. For more information, please e-mail *studemp@montgomerycollege.edu* or visit the website: *www.montgomerycollege.edu/ejobs.*

Student Life

The Office of Student Life on each campus provides a place for students to take advantage of a variety of programs and opportunities to get involved in at the college. These opportunities are an integral part of the co-curricular experience and enhance the academic experience at the College. Programs provide students with skills and abilities in such areas as leadership, communication, program planning, budget and financial management, collaboration, social and civic engagement, and multicultural understanding. Programs and events may focus on student, college, campus, and community issues; examples of such issues are academic majors, honor societies, entrepreneurship, recreation and wellness, arts, service learning, and theatre and film.

The Office of Student Life offers leadership training to give students the necessary skills to participate effectively in clubs and organizations. Students have the opportunity to run for student government offices, participate in planning and recommending allocation of budget expenditures, and contribute to the development of campus life. Available clubs and organizations vary by campus but generally include cultural, ethnic, religious, political, mentoring, tutorial, recreational, academic, and service clubs; other organizations include campus newspapers, and the campus Student Senates. Suggestions for new groups and programs are always welcome.

The Offices of Student Life are located in room 186 of the Sciences and Applied Studies Building at Germantown, room 005 of the Campus Center at Rockville, and room 216 of the Student Services Center at Takoma Park/Silver Spring.

New Student Orientation

The New Student Orientation Program is a beneficial program for all incoming first year students. The three campuses offer several program formats before the beginning of fall and spring semesters. Specific information may be obtained from the Office of Student Life websites for each campus: Germantown, *www.montgomerycollege.edu/departments/studevel*; Rockville, *www.montgomerycollege.edu/departments/stdactrv;* Takoma Park/Silver Spring, *www.montgomerycollege.edu/departments/stdactp*.

The orientation program introduces students, parents, and family members to a variety of first-year experiences designed to facilitate the transition to college life and help students enjoy a successful year at Montgomery College. Faculty, staff, administrators, and students collaborate to provide work- shops, open houses, tours, discussions, and social events to help new students and their families learn about services, college expectations, campus life, academic issues, parent/ family involvement, safety, and much more.

Support Centers

The College provides a number of centers at each campus that support student success. Services include tutoring, study skills development, access to information technology, books, models, audiovisuals and other media, and other success skills materials and support activities. There is no charge for use of these services. Students are encouraged to stop by

any of the centers listed below for information regarding hours and available services.

Germantown Campus

- *Math Accounting Physics Engineering Learning (MAPEL) Center*, 229 HT
- *Science Learning Center*, 202 SA
- *Technology Lab Center*, 230 HT
- *Writing Center and Language Lab*, 150 HS

Rockville Campus

- *CA/CS Computer Tutoring*, 320 HU
- *Career and Transfer Center*, 219 CB
- *ESL Tutoring*, 20 MT
- *General Purpose Computer Labs*, 312, 314 HU; 21A, 25/26 CS
- *Math/Science Center*, 02 MT
- *Writing and Reading Center*, 002 HU
- *Writing, Reading, and Language Center*, 20 MT

Takoma Park/Silver Spring Campus

- *Learning Skills Support Services*, 325 HC
- *Math/Science Learning Center*, 101 SN
- *Math Tutoring Center*, 249 MP
- *Medical Learning Center*, 221 HC
- *Social Sciences Computer Center*, 110 CM
- *Student Technology Center*, 304 ST
- *Writing, Reading, and Language Center*, 105 RC

Television

Montgomery College Television (MCTV Channel 10 on Verizon, Comcast, or RCN cable), is a nationally award-winning educational television channel providing high-quality, thought-provoking TV programming for students and community members of all ages. Montgomery College students can get involved in many ways: participating in practical hands-on engineering and television production internships, involving live TV studio, remote field shoots, state-of-the-art digital video and audio editing, and multimedia projects; supplementing in-class, blended, or online classes by watching related support programs; or simply by being a part of the station's community of viewers. For more information about the College's array of digital media services, visit *www.montgomerycollege.edu/mctv.*

Transportation

Current Montgomery College students can take the Ride On bus free of charge. They must simply show the Ride On driver a College student identification card with a current semester sticker. Express routes may incur a fee. Ride On schedules, maps, and routes are available online at the Ride On and Transit Services page of the Montgomery County website: *www.montgomerycountymd.gov*. For details on how to obtain a valid MC student ID, visit *www.montgomerycollege.edu/studentid.*

TRIO Programs

In 1965, Congress established a series of programs to help low-income Americans enter college, graduate, and move on to participate more fully in the country's economic and social life. These programs are funded under Title IV of the Higher Education Act of 1965 and are referred to as the TRIO Programs. Two of these programs are the Educational Opportunity Center and Student Support Services.

Educational Opportunity Center

The Educational Opportunity Center (EOC) provides information and counseling on college admissions to qualified adults who want to enter or continue a program of postsecondary education. An important objective of EOC is to counsel participants on financial aid options and to assist in the application process. The goal of EOC is to increase the number of adult participants who enroll in postsecondary education institutions.

Students in the program are eligible to receive career counseling, college admission and financial aid counseling, application assistance, and, when necessary, referrals to English as a Second Language and GED instructional programs. Participation

eligibility is based on the following categories: first-generation college student (neither parent has a bachelor's degree), low-income student (based on taxable income and family size), and the desire to enroll in postsecondary education. In addition, students must be U.S. citizens or permanent residents or meet the residency requirements for federal financial assistance. The EOC office and satellite locations at community-based organizations, social services agencies, and other community resource programs make higher education information conveniently accessible.

The EOC program is located in 150 CF on the Takoma Park/Silver Spring Campus. For more information please call 240-567-5644 or visit the website *www.montgomerycollege.edu/admissions/mceoc*.

Student Support Services

Student Support Services TRIO is a federally funded grant program serving Montgomery College since fall 2001. Our goal is to positively affect and increase the college's retention, transfer, and graduation rates by providing and coordinating a variety of educational support services and activities for our first-generation college students, meet federal low-income guidelines, and/or are students with disabilities. In this capacity, we facilitate the process of a student's transition from one level of higher education to the next.

Participation in the program is limited to 175 Montgomery College students. To qualify (to be eligible) a student must be

1. a U.S. citizen or permanent resident,
2. currently enrolled, and
3. a member of one or more of the following categories:
   - a first-generation college student, meaning that neither of the student's parents has received a four-year degree prior to the student turning 18;
   - a low-income individual—meet low-income requirements based on federal guidelines. If a student is receiving a financial aid Pell Grant he or she may qualify; or
   - an individual with a disability—have a documented physical or learning disability through the college's Disability Support Services Office.

Student Support Services' goal is achieved by providing

- staff invested in one's academic success,
- personalized attention to an individual-situation,
- assistance in learning to navigate through the College system and identify resources,
- a learning community for personal and academic growth,
- academic advising and monitoring,
- resource information for career exploration and planning,
- transfer assistance and advising,
- financial aid application assistance, and
- a sense of belonging and purpose.

We believe in the value of each individual, and we enjoy the privilege of serving and witnessing student growth. We believe in students' dreams and provide a nurturing and supportive environment for the realization and accomplishment of those dreams. We are committed to lifelong learning. Our goal is to empower students to make positive life choices, adapt to a changing world that requires new responsibilities and skills, and create and maintain supportive connections and communities.

Please e-mail *sss@montgomerycollege.edu* or visit our website at *www.montgomerycollege.edu/Departments/ssserv* for more information.

Academic Regulations and Standards

The following academic regulations and standards information is a summary of a selection of critical student regulations. Information in this section is intended as reference material and is not the official language of the Montgomery College Academic Regulations. A complete and updated list of the official regulations can be viewed in the College's Policies and Procedures, posted online at *www.montgomerycollege.edu/pnp*.

Definition of Full-Time Student

A full-time student at the College is defined as one who is enrolled in 12 or more credit hours (billing hours) per semester.

Course Structure

A *credit hour* or *semester hour* is equivalent to approximately 15 hours of lecture, 30 hours of laboratory or studio, or 45 hours of an alternative instructional situation, such as an internship. Fall and spring courses are usually taught for 14–15 weeks, including final examinations. A three-credit lecture course may meet three days a week for 50 minutes each session, two days a week for 75 minutes each session, or once a week for 150 minutes. Condensed courses (same total hours of instruction but taught over fewer weeks) are also available. Two summer sessions offer courses varying in length from four to eight weeks. A winter session offers a limited number of intensive courses over a three-week period.

For lecture courses, it is expected that most students will spend two hours of study or preparation for each hour of class.

Class Attendance

Students are expected to attend all class sessions. The instructor may drop the student from the class in cases involving excessive absences. "Excessive absences" is defined as

one more absence than the number of classes per week during a fall or spring semester; the number of absences is prorated for accelerated sessions.

Grading System

Grade	Standard	Quality Points
A	Superior	4
B	Good	3
C	Average	2
D*	Pass without recommendation	1
F	Failure	0
I	Incomplete	None
P	Pass (Credit by Examination)	None
S	Satisfactory	None
U	Unsatisfactory	None
W	Withdrawn	None
AU	Registered for audit	None
H	Successful completion of first half of MATH 080	0
M1	In progress in the first half of MATH 080	0
M2	In progress in the second half of MATH 080	0

**The grade of D may not be accepted for transfer credit.*

Incomplete grades are exceptional marks that students earn after they attend the majority of a course and complete satisfactory work but, for circumstances beyond their control, are unable to complete a small portion of the course work. The instructor will provide students with incomplete forms stipulating work to be done by a certain date, usually by the fourth week of the following fall or spring semester.

The grade of W (withdrawn) will be recorded if a course is dropped after 20 percent of its length has been completed. A student may officially withdraw from a course and receive a grade of W until 73 percent of its length has been completed.

Students who stop attending classes but do not officially withdraw by the 73 percent deadline will receive a grade of F.

The grades of S (satisfactory) and U (unsatisfactory) may be earned only in courses not included in computing the grade point average (GPA).

Unless the catalog states otherwise, a student may only attempt a course three times. The grade of record will be the most recent grade. The grade of AU will not be considered an attempt.

Calculating a Grade Point Average

A student's GPA is calculated by multiplying the number of credit hours in a certain course by the appropriate number of quality points (4 for an A, 3 for a B, etc.) and then dividing that number by the course's credit hours. For example, a student taking a three-hour course and earning an A will be entitled to 3 times 4, or 12, quality points. Those 12 points are then divided by the number of credits (3) to give a GPA of 4.0.

The cumulative GPA, which factors in courses taken throughout a student's career at Montgomery College, is calculated by dividing the total number of quality grade points earned in all semesters by the total number of credit hours. Only courses that have a recorded grade of A, B, C, D, or F may be factored into the computing of quality grade points or overall GPAs.

Note that credit hours and semester hours are one and the same when it comes to calculating GPA.

Academic Standing

Students are expected to maintain a level of competent achievement in their courses. A minimum GPA of 2.0 is required for a student to achieve and remain in good academic standing. Students not in such standing will be placed on academic alert, academic restriction, or suspension as appropriate. Information on these three statuses is published in the Academic Regulations section of the College's Policies and Procedures on the web at *www.montgomerycollege.edu/pnp*.

Dean's List

To qualify for the Dean's List, a student must earn a 3.4 GPA with a semester load of no fewer than five credit hours.

Student Cumulative Records

Any past or present student cumulative record as maintained by the College is considered confidential, and access to the record is limited to the current student/College alum, or those persons who have legitimate requests for the information contained in the record. Student cumulative records are maintained in the Office of Admissions and Records on each campus. Detailed information about student rights to and release of records can be viewed in section 41003 of the Policies and Procedures posted online at *www.montgomerycollege.edu/pnp.*

Graduation

To qualify as a candidate for the associate's degree, a student must have earned a minimum of 60 hours of academic credit, which must include (a) the General Education requirements (see the Curricula section of this catalog) and (b) all courses required in the curriculum elected by the student. No more than 45 of the 60 hours required for the associate's degree may be earned outside of the College (70 percent of the required credit hours for certificates). Health Science students may have additional requirements. Students should consult a program coordinator for more information.

To qualify as a candidate for a certificate or a degree, a student must have a minimum cumulative GPA of 2.0 and a 2.0 GPA in the curriculum in which the degree or certificate will be granted. To receive the associate of arts in teaching (AAT), students must have a minimum cumulative grade point average of 2.75 and must present acceptable scores on one of the following state-approved standardized tests: SAT, ACT, GRE, or Praxis I Pre-Professional Skills Test. To qualify for graduation honors, a student must have a cumulative GPA of 3.4. The general obligations of the candidate are published in the Academic Regulations section of the College's Policies and Procedures (on the web at *www.montgomerycollege.edu/pnp).*

An annual commencement is held at the end of the spring semester. Diplomas are awarded at the end of each semester and summer session. All students graduating during an academic year are eligible to participate in the spring commencement.

Prior to a student's graduation, the Admissions and Records Office must conduct an official graduation review. To ensure that graduation candidates can make any final changes to their final semester schedules, these students are expected to file applications for candidacy with their campus registrars no later than:

February 15 for spring graduation
June 1 for summer graduation
October 1 for fall graduation

There is no guarantee that applications received after this date will be processed in time for the resulting degree audit to be useful in planning a student's last semester. Students should see a counselor for assistance with a graduation audit before applying for graduation. A degree audit tool is also available for student use through the MyMC portal.

Students who plan to graduate from Montgomery College should select one catalog during their enrollment and follow the curriculum outlined in that catalog, provided they graduate within seven years of the catalog chosen. If there is a consecutive two-year break in enrollment, the student must use a catalog issued during the enrollment period following the two-year break in enrollment. Time limits may be appealed.

The preceding academic regulations and standards information is a summary of a selection of critical student regulations. Information in this section is intended as reference material and is not the official language of the Montgomery College Academic Regulations. A complete and updated list of the official regulations can be viewed in the College's Policies and Procedures, posted online at *www.montgomerycollege.edu/pnp.*

Special Programs

ACES - Achieving Collegiate Excellence and Success

The College's Achieving Collegiate Excellence and Success (ACES) Program provides MC academic coaches to targeted students in selected Montgomery County Public School (MCPS) high schools. When ACES students graduate from MCPS and come to the College, an academic coach assists them while they are here and as they prepare to transfer to the Universities at Shady Grove (USG), if the students select to attend there. The coaches provide both academic and student support, using a case management approach. They meet individually with students and provide test preparation, tutoring, assistance with college applications and financial aid/scholarship applications, and college visits. ACES is an intrusive approach to student success by identifying and neutralizing barriers that may prevent an at-risk student from graduating with a bachelors degree. ACES is co-sponsored by MPCS, MC, and USG.

Arts Institute

The Arts Institute promotes, enhances, and supports the broad range of arts programs at the College, including graphic design, dance, film, fine arts, illustration, music, photography, and theatre. With support from the Montgomery College Foundation and the College's donors, the Arts Institute brings distinguished guest artists and arts activities to all three campuses for the benefit of students, faculty, staff, and the community.

Through its Distinguished Guest Lecture Series, the Baltimore Symphony Orchestra Distinguished Chamber Music Series, the Willpower! Festival, the World Arts Festival, Gateway to the Arts, and other programs that bring visiting artists to the College, students are given exceptional opportunities to work with and learn from distinguished professionals and scholars. Special exhibits, such as "Portraits of Life: Student Experiences" and "Morris Yarowsky: Selected Works," are typical of special projects produced by the Arts Institute.

The Arts Institute enables internships at museums so that students can discover additional career options in the arts and blend learning in the classroom with on-the-job experience. The Arts Institute Study Abroad program has taken arts students to study in Italy and China.

Working with the arts faculty and staff, the Arts Institute also develops collaborative projects with area arts organizations to enhance College and community programs in the arts.

For more information on the Arts Institute, visit *artsinstitute.montgomerycollege.edu* or e-mail *david.phillips@montgomerycollege.edu*.

Cooperative Education & Internship Program

The Collegewide Cooperative Education (Co-op) & Internship Program is an academic course that places eligible students in full- or part-time jobs in their major. Students can earn up to three academic credits each semester (a maximum of six at the College) while participating in work experiences related to their major. Students can be paid by their employer or opt to work in volunteer positions. For both co-op and internship students, the program offers an opportunity to blend classroom learning with on-the-job experience.

To be eligible for co-op and internships, students must be enrolled at the College, must have completed 12 college credits (including two courses in the student's major), and must have a minimum 2.0 grade point average. The Co-op & Internship Office is located on the Takoma Park/Silver Campus, but students from all campuses are encouraged to participate in the program. The director regularly visits the Germantown and Rockville campuses for orientation sessions and student meetings. For more information and applications, please call 240-567-1360 or visit the website: *www.montgomerycollege.edu/departments/cooped.*

Developmental Courses

Developmental courses are offered for students who need to strengthen their academic foundations in English, reading, and mathematics in order to be successful in college level courses. Students may be required to enroll in one or more developmental courses, based on their academic records, the results of assessment testing, and individual needs.

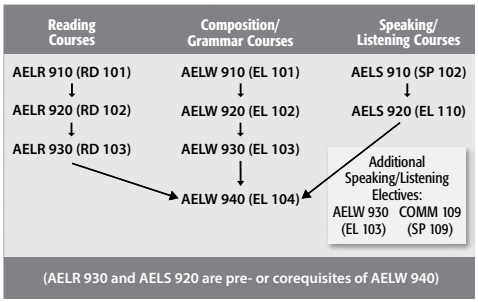
Depending on the placement of the student and the number of developmental courses taken, a student may enroll in additional courses for credit, if the assessment level for each course has been met. See the course descriptions in this catalog for assessment levels associated with each course. Students may enroll in developmental courses on either a part-time or full-time basis. See Assessment Testing (Appropriate Course Placement) in the Admissions and Registration section of this catalog for more information.

English as a Second Language (American English Language Program)

The American English Language Program (AELP) offers courses designed to prepare non-native speakers of English for successful college work in the United States. The program includes four courses that develop writing and grammar skills (AELW 910, AELW 920, AELW 930, and AELW 940), three courses that emphasize reading skills and vocabulary (AELR 910, AELR 920, and AELR 930), and several courses that focus on speaking, listening, and note-taking (AELS 910 and AELS 920, with additional electives AELS 930 and COMM 109). Students placed into the AELP must pass or test out of AELW 940, AELS 920, and AELR 930 in order to take most courses that count toward a degree at Montgomery College.

Following admission to the College, students are tested to determine their current level of English proficiency, as required by College regulations. Non-native speakers may test out of one or more sequences or the entire program if their scores are sufficiently high. If they test out entirely, they will be eligible for ENGL 101/101A and will be able to enroll in transferable credit-level college courses. Students whose language test scores indicate that they are not ready for the College's entry-level AELP courses are referred to the Workforce Development & Continuing Education Division for classes in pre-academic English.

Students may enroll in the AELP on a full-time or part-time basis on all three campuses. For assistance or additional information, contact the Office of the Dean of Student Services or the AELP coordinator at the Germantown, Rockville, or Takoma Park/Silver Spring campus.



Gudelsky Institute for Technical Education

To meet the technical education and training needs of the workforce and the community, the Homer S. Gudelsky Institute for Technical Education (GITE) provides instructional programs in four primary areas: automotive technology; building and construction technology; electronic publishing; and workforce technologies, which includes computer repair, welding, locksmithing, and machining. GITE offers both credit and noncredit courses taught via classroom and lab training, on-site or off-site customized contract training, apprenticeship training, and long or short-term training. For more information, please visit the website: *www.montgomerycollege.edu/departments/gitev.*

Health Sciences Institute

The Health Sciences Institute was designed to meet the needs of health care providers in the metropolitan Washington area. It offers both noncredit and credit courses and programs of study in various health care careers. These courses and programs will provide individuals with workforce skills,

certification in specific disciplines, and associate's degrees in an array of health sciences. Customized courses and programs, training courses, seminars, and specialty workshops are available. Experienced faculty, from the College or from the local community of health care providers, participate to develop the workforce for the health care community. For more information, visit the website: *www.montgomerycollege.edu/healthsciences.*

Hillman Entrepreneurs Program

The Hillman Entrepreneurs Program is a scholarship and educational program that supports, develops, and graduates ethical leaders who want to energize and give back to their local communities. The Hillman program is open to all transferable majors starting at Montgomery College and finishing at the University of Maryland. Students receive tuition and book support, mentoring, internships, and courses that feed into a minor in technology entrepreneurship at the University of Maryland, and students also participate in a strong cohort experience with other aspiring entrepreneurs.

Minimum requirements to apply include a base GPA of 2.5 or higher, completion of one transferable math course and a total of 30 transferable credits by the enrollment date. Applicants must also be pursuing their first bachelor's degree in a degree that is available at the University of Maryland. Finally, they must be Maryland residents (U.S. citizens, students with permanent resident status or students covered by the Dream Act). The application process includes completion of the application form, a short essay, one letter of recommendation, and a resume. Selected students are then invited to an interview to determine their suitability for the program. A total of 30 students are accepted each year into this program.

More information about this program can be found at *http://cms.montgomerycollege.edu/hillmanprogram.*

Honors Programs

Collegewide Honors Program

The College is committed to providing high-ability, motivated students with stimulating and challenging opportunities both inside and outside the classroom. Honors course offerings are varied and differ on each campus based on faculty interests and the number of students participating in the program. Honors offerings are listed in the class schedule by academic department and in the campus Honors Program section. Honors tutorials and independent study classes are both designated with an HP prefix. They give students the opportunity to pursue a special topic in a seminar-format class or work on an independent research project with a professor. Honors classes, indicated with an HC suffix, are honors sections of standard classes. Honors modules, indicated with an HM suffix, allow students to have an enriched honors experience while taking a standard class.

The Honors Program is collegewide and designed for the high-achieving student. The program requires that participating students complete a minimum of 15 honors credits distributed among at least three different disciplines (such as the arts, humanities, social sciences, and sciences) in a minimum of two semesters. In order to receive the Honors Program designation on their transcripts, students must maintain a minimum 3.2 grade point average (GPA) until they either graduate from the College or transfer to another institution.

Honors Program students receive special advising opportunities, including schedule, scholarship, and transfer counseling. They can also participate in activities set up for honors students such as clubs, honors colloquia, conferences, lectures, theatre performances, and other events. A limited number of Honors Internships are available. These have a competitive application and may require GPA above the Honors Program minimum of 3.2.

Applicants must meet one of the following entry requirements: (1) SAT scores of 600 on each section and a minimum high school GPA of 3.5 on a 4.0 scale (unweighted), (2) eligibility

for ENGL 102 as determined by the Montgomery College placement process and a minimum high school GPA of 3.5 on a 4.0 scale (unweighted), (3) completion of a minimum of 12 credits in transfer-level classes at Montgomery College with a minimum 3.2 GPA, including a grade of A or B in ENGL 101 or ENGL 101A.

Admission to the Honors Program requires a separate application process. Applications are available online at *www.montgomerycollege.edu/advantage/honors* and through the Admissions and Records Office and the honors coordinators at each campus. For more information, contact Dr. Lucy Laufe, collegewide and Germantown/Rockville honors coordinator, at *lucy.laufe@montgomerycollege.edu*; or Dr. Carole Wolin, Takoma Park/Silver Spring honors coordinator, at *carole.wolin@montgomerycollege.edu*.

Students who do not enroll in the Honors Program, but wish to take honors classes, must have a minimum 3.2 GPA and must have completed at least 12 credit hours of college-level coursework, including ENGL 101 or ENGL 101A with a grade of A or B. Exceptions to these requirements may be made on a case-by-case basis by the campus honors coordinator. Recent high school graduates may be admitted to honors courses based on evaluation of high school grade reports.

Students who have completed 12 credit hours of honors work, by the end of the fall semester in at least two different disciplines, and who have maintained a 3.4 GPA or better, are eligible to be recognized as honors scholars at campus academic awards ceremonies in the spring semester. For more information about the honors scholars award, contact the campus honors coordinators.

Macklin Business Institute Scholars Program

The Gordon and Marilyn Macklin Business Institute Scholars Program is a competitive collegewide program offering business students an opportunity to pursue honors coursework in accounting, economics, and statistics, and to participate in a weekly honors seminar. Students meet and interact with business leaders and may qualify for a business internship. Students admitted to the one-year sophomore-level or two-year program are provided with the use of a laptop computer and are usually offered a scholarship benefit that covers the in-county full-time cost of tuition and fees (up to 30 credit hours at the in-county rate per academic year).

To apply for the two-year program, students must have completed high school graduation requirements by the end of June or must be returning Montgomery College students with fewer than 12 credits. Scholars are chosen on the basis of high school records, SAT scores, recommendations, essays, and interviews. The application process for the two-year program begins each year in September, with applications due in mid January. Students are notified of their acceptance in April.

To apply for the one-year sophomore-level program, students should have 24–36 transferable credits and be following a business transfer program in preparation for transfer to a program for completion of a bachelor's degree. The application period for the one-year program begins each year in February, with applications due April 30. Students are notified in June of their acceptance for the fall semester, which is when the one-year program begins.

Students are expected to maintain 12 or more credits per semester during their participation in the program. For more information, please e-mail *mbi@montgomerycollege.edu*, or visit the website at *www.macklin.org.*

Montgomery Scholars Program

The Montgomery Scholars Program, which opened on the Rockville Campus in fall 1999, is a selective-admissions program designed for high school graduates who plan to transfer to a four-year institution at the end of two years. Scholars are chosen on the basis of high school records, SAT scores, intellectual interests, extracurricular activities, recommendations, essays, and other indicators of academic excellence.

Montgomery scholars participate in an academically rigorous curriculum of honors courses, including team-taught, interdisciplinary classes especially designed for the program. During the summer between

their freshman and sophomore years, students have the opportunity to participate in a summer study travel experience. The capstone experience of the program is an honors colloquium. Students study and research an important issue related to their major and area of academic interest and present their research in a public colloquium. The Montgomery Scholars Program emphasizes the importance of expert counseling in helping students to plan their course of study and prepare their portfolios for transfer.

For more information, contact Dr. Mary Furgol (*mary.furgol@montgomerycollege.edu*) or visit the website: *www.montgomerycollege.edu/admissions/MCScholars.*

Renaissance Scholars Honors Program at Germantown and Takoma Park/ Silver Spring

The Renaissance Scholars Program is designed to accommodate the needs of both part-time and full-time high-achieving students interested in a challenging curriculum while they acquire courses needed for their associate's degree and beyond. The core of the program consists of team-taught, interdisciplinary pairs of courses that are offered in the evenings and on weekends.

In addition to stimulating coursework, students have the opportunity to participate in numerous social, cultural, and academic experiences outside of the classroom that help foster a learning community and enrich the students' educational experiences. Students in this honors program receive scholarship support, special advising, and the opportunity to receive College credit for a study/travel experience during the summer. Admission to this honors program is selective and requires a separate application process. Students are selected on the basis of a portfolio that includes an essay, a personal or professional resume, and letters of recommendation.

For more information, contact Professor Joan Naake at the Germantown Campus at *joan.naake@montgomerycollege.edu*, or Dr. Carole Wolin at the Takoma Park/Silver Spring Campus at *carole.wolin@montgomerycollege.edu*, or visit the website *www.montgomerycollege.edu/renscholars.*

Information Technology Institute

In response to the need for skilled information technology workers, the College established the Information Technology Institute (ITI). ITI offers cutting-edge technology courses at all three College campuses as well as at off-campus centers in Gaithersburg and Wheaton. ITI also provides customized training at business sites throughout the region.

ITI is designed to prepare new workers and retrain existing workers to fill positions in Montgomery County's high-technology market. Noncredit courses are available to meet a wide range of student needs and career goals. Courses are taught by knowledgeable practitioners in the field who bring their on-the-job expertise to the classroom.

The College is a member of the Microsoft IT Academy, through which ITI offers courses in the Microsoft Official Curriculum. The College is also a member of the Oracle Academic Initiative, the Oracle Workforce Development Program, and the Cisco Systems Networking Academy. Courses in these programs offer students the opportunity to prepare for industry certification examinations.

Special programs provided by ITI include TechLEAP, a 6–12 month retraining program for individuals seeking new careers in the information technology field. TechLEAP offers three career paths in web design, programming, and networking. In addition to classes, participants may be eligible for paid internships with area employers.

For more information on ITI, please e-mail *edmund.palaszynski@montgomerycollege.edu*, or visit the website at *www.montgomerycollege.edu/iti.*

International Education Program

The International Education Program (IEP) has been developed to bring a greater awareness of world cultures and global perspectives to the student body and the community through activities that foster understanding and appreciation of all cultures. These activities cover three interrelated areas: culture, curriculum, and travel.

Culture: The international richness of Montgomery College's enrollment enhances a

student's understanding and appreciation of one another through daily contact. The IEP further enriches the College and community population through special programs that include exhibitions, performances, lectures, films, discussions, and culinary events.

Curriculum: The international studies concentration of the liberal arts and sciences curriculum was developed by the College's faculty to allow students to explore careers in foreign service and international business. In addition, many courses have an international focus that reflects the College's emphasis on global issues.

Programs: The IEP offers long- and short-term study abroad opportunities. Students may select from a consortium of institutions in more than 26 countries to study abroad for a semester, a summer, or a year. These accredited academic institutions provide programs, courses, and room and board for students. To participate, students must have a 2.5 grade point average and at least 12 college-level credits. A semester of advance planning through the Office of International Education is required before going abroad. In addition, to enhance student knowledge of the world, faculty members offer short-term study/travel related to the study areas of selected credit courses. Study groups have gone to Russia, China, England, Greece, Turkey, Jordan, Egypt, Morocco, Mexico, Thailand, Vietnam, Senegal, The Gambia, Peru, and India, to name a few. New destinations are offered each year, and yearly brochures highlight courses with a study/travel component. Students who do not wish to take a 15-week credit course but who want to participate in the travel experience may do so through pre-departure classes in partnership with Workforce Development & Continuing Education.

For more information, visit *www.montgomerycollege.edu/departments/internationaleducation* or contact Dr. Greg Malveaux, coordinator, Study Abroad, at *greg.malveaux@montgomerycollege.edu*.

Internships—*See Cooperative Education & Internship Program*

Information about internship opportunities is also available from Student Employment Services, the Career/Transfer Centers, academic departments, counselors, and advisers.

MC/MCPS/USG Partnerships

Montgomery County Public Schools

There are currently 31 academic initiatives in the MC and MCPS partnership designed to help prepare students for a smooth transition to postsecondary education. The Office of Concurrent Enrollment has been developed to better serve the full spectrum of student needs.

For more information, visit the website: *www.montgomerycollege.edu/departments/mcps.*

Dual Enrollment Programs

Dual Enrollment is one of the College's Academic Initiatives offered to advanced high school students at Montgomery College. Select students accepted to the College are enrolled in college courses while still attending high school, providing an educational experience beyond what is available at the secondary level. High school juniors and seniors who meet the College's Dual Enrollment criteria may enhance their schedule with college course work and experience the independence of college-level study while also earning college credit. For more information *visit www.montgomerycollege.edu/dep.*

Career Programs of Study

Career Programs of Study are pre-college academic programs that focus on specific career pathways. Students who earn at least a "B" in college-level coursework at their high schools may earn college credits when they enroll at Montgomery College in a related program of study. This gives students a head start on college, and saves money because the credits earned in high school are free; there is no tuition charged, no book or lab costs, and no registration fees. Students

in this program also gain hands-on skills that will allow them to make informed decisions about college majors and career choices. The following programs are available:

MCPS Program	MC Program
Accounting/Finance	Accounting/ Business
Automotive Technology/ Automotive Dealership	Automotive Technology
Biotechnology	Biotechnology
Building Trades	Building Trades Technology
Business Administration	Computer Applications
Computer Science and Technologies/ Information Technology/ Multimedia and Interactive Technologies	Computer Science/ Information Systems/ Computer Programming/ Gaming/Web Development
Construction Management	Architecture and Construction Technology
Early Child Development	Early Childhood Education Technology
Justice, Law, and Society	Paralegal Studies
Landscape Technology/ Horticulture	Landscape Technology
Medical Careers	Health Sciences
Network Operations	Computer Science/ CISCO
Network Operations/ Computer Maintenance	Network and Wireless Technologies
Project Lead the Way Engineering	Engineering Science
Restaurant/Food and Beverage Management	Hospitality Management

Prince George's County Public Schools students enrolled in the Automotive Technology or Building Trades programs, Howard County Public Schools students enrolled in the Biotechnology program, Washington County Public Schools students enrolled in the Building Trades program, and District of Columbia Public School students enrolled in the Biotechnology Program earn credits on the same basis as MCPS Career Programs of Study students. Any Printing Management completer at any public high school in the State of Maryland may transfer appropriate credits to Montgomery College under the statewide Printing Management Technology articulation agreement. At Montgomery College, the career programs of study are facilitated through the Office of the Senior Vice President for Academic Affairs. For more information, please visit the website: *www.montgomerycollege.edu/departments/mcmcps/techprep/index.htm*.

Universities at Shady Grove

A unique partnership with USG allows College students to earn bachelor's degrees from University System of Maryland four-year institutions offering programs in Montgomery County. Students can complete an associate's degree at the College and then complete the final two years of study for a bachelor's degree at USG, conveniently located in Rockville.

The following institutions are currently involved in this partnership: Bowie State University; Salisbury University; Towson University; University of Baltimore; University of Maryland, Baltimore; University of Maryland, Baltimore County; University of Maryland, College Park; University of Maryland, Eastern Shore; and University of Maryland University College.

Institutions in this partnership offer courses at USG that can be applied toward undergraduate degrees in the following areas:

- accounting,
- biological sciences,
- biotechnology,
- business,
- communication studies,
- computer and information science,
- computer networks and security,
- construction management technology,
- criminology and criminal justice,
- cybersecurity,
- digital media and web technology,

- education,
- exercise science,
- health systems management,
- history,
- hotel and restaurant management,
- human resources,
- investigative forensics,
- information systems management,
- laboratory management
- management with a specialization in entrepreneurship,
- marketing,
- nursing,
- political science,
- psychology,
- public health science,
- public safety administration
- respiratory therapy
- simulation and digital entertainment, and
- social work.

Additional programs will be added in future semesters. Please consult USG's website (*www.shadygrove.umd.edu*) for more information. The student's diploma will be from the specific institution offering the degree program.

USG also offers graduate-level programs in a variety of areas, including biotechnology, business administration, cybersecurity, information technology, education, engineering, health care administration, industrial organizational psychology, management, nursing pharmacy, public administration, publications design, social work, and technology management.

These programs are offered through the institutions listed above. A variety of certificate programs are also available through University of Maryland University College. Because of the nature of the specialized programs and courses, students interested in transferring to USG must carefully plan their academic program at the College. For more information about degree programs and admission, contact an MC adviser; call USG at 301-738-6023; or visit *www.shadygrove.umd.edu* or *www.montgomerycollege.edu/MC2USG.*

Montgomery County Collaboration Board

The MC Board of Trustees and the Montgomery County Board of Education seek the advice and counsel of residents of the community, employers, and educational representatives through the establishment of cluster advisory committees. Operating under the Montgomery County Collaboration Board (MCCB), these advisory committee members serve to advise, counsel, and assist in the planning, development, and evaluation of the MCPS and MC systems' efforts in creating and maintaining a well-prepared, educated, and adaptable workforce to meet the current and future needs of employers through articulated programs in Montgomery County. The MCCB serves as a forum for critical stakeholders to engage in dialogue on the ways and means of providing cutting-edge education and training programs to the county's secondary and postsecondary students.

While the MCCB is advisory in nature and is not charged with administrative, policy-making, or legislative responsibility, the members' recommendations influence actions in providing rigorous and realistic preparation for students. The operations of the MCCB are divided among 11 Career Cluster Advisory Boards, each with its own workforce specialization.

Cluster Advisory Board specializations include the following areas:

- Arts, Humanities, Media, and Communication
- Biosciences, Health, and Medicine
- Business Management and Finance
- Construction and Development
- Education, Training, and Child Studies
- Engineering, Research, and Manufacturing
- Environmental, Agricultural, and National Resources
- Human and Consumer Services, Hospitality, and Tourism

- Information Technologies
- Law, Government, Public Safety, and Administration
- Transportation, Distribution, and Logistics.

The regular voting members of the overarching MCCB consist of an MCCB president, 11 Career Cluster Advisory Board presidents, and one student representative from both MCPS and MC.

At Montgomery College, the MCCB is facilitated through the Office of the Senior Vice President for Academic Affairs.

Paul Peck Humanities Institute

The Paul Peck Humanities Institute enriches the learning and teaching experiences of Montgomery College students and faculty, from all disciplines, through the humanities. The Institute reaches students in three ways: by offering humanities events that enable students on all three campuses to interact with speakers engaged in a wide variety of topics; by generating the Smithsonian Faculty Fellowship program, in support of Montgomery College faculty who utilize the Smithsonian as a teaching resource; and by providing internship programs that diversify the learning opportunities of high-achieving students.

The Paul Peck Humanities Institute generates various additional programs and collaborations designed to enrich the experience of learners at Montgomery College and in our wider communities. For more information, please visit the website *www.montgomerycollege.edu/humanities*, or contact *sara.ducey@montgomerycollege.edu*.

The Smithsonian Institution, Library of Congress, and United States Holocaust Memorial Museum Internship Programs: HONR 275PA, HONR 275PB, and HONR 275PG

The Smithsonian Institution, Library of Congress, and the United States Holocaust Memorial Museum Internship Programs provide unique opportunities for Montgomery College students to experience the professional environment of world-class museum and library research activities. Samples of activities an intern may participate in include: assisting with new or ongoing research programs, performing collection analysis and organization, designing and preparing new exhibits, abstracting and archiving academic materials, and planning new educational programs. Eligible students have completed 15 credit hours of coursework at Montgomery College, have earned a 3.4 overall grade point average, and will have completed ENGL 102 or ENGL 103 with grades of B or better prior to applying for the internship. Interested students should prepare themselves for this opportunity by taking General Education courses and earning high grades.

Students serve 240 hours at the internship site (typically 16 hours/week during fall or spring, and 20 hours per week during summer I and II). Stipends of $1,100 may be awarded to program interns as funding is available and are intended to help with tuition and/or transportation costs related to commuting to the internship site.

Potomac Review Internships: HONR 275PF

Internships with the *Potomac Review* offer Montgomery College students the opportunity to be involved in all facets of magazine production, including decision making about layout, design, and the selection of submissions. Interns play a key role in organizing the annual F. Scott Fitzgerald Literary Conference. Eligible Montgomery College students have completed one of the following creative writing courses with a grade of B or better: ENGL 264, ENGL 265, ENGL 272, ENGL 273, and HONR 251CJ (Writing Your Novel). Other courses may be considered for eligibility.

Internship awards cover the cost of three in-county credit hours and are awarded pending available funding.

For more information, please visit *www.montgomerycollege.edu/humanities*, or contact Professor Julia Wakeman-Linn at *PotomacReviewEditor@montgomerycollege.edu*.

Paul Peck Institute for American Culture and Civic Engagement

The Paul Peck Institute for American Culture and Civic Engagement was established at

the College in 2004 to educate Americans of all ages about our culture, our history, our principles, and our responsibilities and thus to get more people participating in the civic and political process.

The institute sponsors the Jefferson Café, a network of community dialogues on issues and themes of American life as well as guest lectures pertaining to American culture and the political process. Partnering with community groups such as the League of Women Voters, the institute offers opportunities for community participation at the College's campuses as well as at other sites throughout Montgomery County. In 2004 and 2005, the institute was awarded a By the People grant by PBS–MacNeil/Lehrer Productions to support the Jefferson Café program. In 2009, the Maryland Humanities Council supported the Institute's year-long Lincoln Bicentennial project with a major grant.

The institute is based at the Takoma Park/Silver Spring Campus, but serves the entire College as well as the surrounding community and, ultimately, the nation. For more information, please contact the director, Dr. Francine Jamin *(francine.jamin@montgomerycollege.edu)*, or visit the website: *www.montgomerycollege.edu/departments/americanculture.*

Phi Theta Kappa International Honor Society

Phi Theta Kappa is the international honor society for students at community colleges. The Beta Kappa Omega (Germantown), Beta Lambda Alpha (Rockville), and Kappa Omega (Takoma Park/Silver Spring) chapters were chartered at the College in 1960. To be considered for invitation to Phi Theta Kappa, a student must have a cumulative grade point average of at least 3.5 for at least 15 credit hours of college-level coursework (excluding AELP courses) at the College. A cumulative grade point average of 3.4 is required to maintain membership. Invitation to Phi Theta Kappa represents one of the highest honors that can be bestowed on a student at the College.

For more information, please contact Lucy Laufe (*lucy.laufe@montgomerycollege.edu)* at the Germantown Campus, Sue Adler (*sue.adler@montgomerycollege.edu)* or Brian Baick (*brian.baick@montgomerycollege.edu)* at the Rockville Campus, and James Walters *(james.walters@montgomerycollege.edu)* at the Takoma Park/Silver Spring Campus.

School of Art + Design at Montgomery College

The School of Art + Design (SA+D) at Montgomery College provides students a portfolio-intensive, art school experience designed to prepare them for transfer to premier art colleges. This studio-intensive program is located at the Takoma Park/Silver Spring Campus in The Morris and Gwendolyn Cafritz Foundation Arts Center.

In the SA+D program, students can earn an associate of fine arts degree (AFA) with major concentrations in either studio art (see page 107) or graphic design (see page 190). The AFA degree is designed as the first half of a four-year bachelor of fine arts (BFA) degree. Two-thirds of the required coursework is in studio art or graphic design and one-third is in general education courses. Coursework is designed to facilitate transfer to baccalaureate institutions and the application process for scholarships at those same institutions.

Prospective students must submit a portfolio of previous artwork, an SA+D application, official transcripts (high school or college) that reflect a 2.3 or better grade point average, and a letter of recommendation. Students must be accepted into the SA+D program prior to course registration. All students in SA+D are assigned a faculty mentor. Faculty mentors work individually with students to prepare them for the two required comprehensive portfolio reviews and the SA+D graduating student exhibition.

The studio-intensive curriculum, combined with a comprehensive program of co-curricular activities, continues the artists' community environment that has been a tradition for over 50 years. For more information, e-mail *andrea.adams@montgomerycollege.edu* or visit the website: *www.montgomerycollege.edu/schoolofartanddesign.*

Continuing Education/Workforce Development Program

The SA+D Continuing Education/Workforce Development Program provides quality noncredit courses in fine arts and visual communications for youth and adults in studio art, photography, and graphic design for print and web. The program provides opportunities for portfolio building, lifelong learning, personal enrichment, and professional skill development. Highly qualified instructors, well-equipped facilities, small class sizes, and convenient course schedules provide a creative, supportive environment for students at all levels.

SA+D is committed to collaborating with other community organizations and educational centers to provide learning venues outside the College campuses to meet art education and training needs throughout Montgomery County. For more information, e-mail *nan.mccoy@montgomerycollege.edu* or visit the website: *www.montgomerycollege.edu/schoolofartanddesign.*

SA+D Pre-College Portfolio Institute

Throughout the year, SA+D provides pre-college portfolio development courses, including an intensive summer Pre-College Portfolio Institute. These programs are offered to high school juniors and seniors (sophomores accepted on a space-available basis) and adults to build artistic skills and develop a well-rounded portfolio for potential college admission and scholarship reviews. For more information, e-mail *nan.mccoy@montgomerycollege.edu* or visit the website: *www.montgomerycollege.edu/schoolofartanddesign.*

Women's Studies

The Women's and Gender Studies Program (WGSP) offers courses about women and gender for both women and men. The program is designed to explore the experiences and cultural contributions of women and those in the lesbian, gay, bisexual, transgender (LGBT) community as well as examine the societal implications of gender. Informed by feminist, gender, and sexuality theory, the courses in the WGSP challenge false assumptions and theories about women, gender, sexuality, race, and class; encourage rigorous critical thinking; raise issues of gender bias and the subjective nature of knowledge; support students' development as individuals and as participating members of their larger communities; and expand women's and men's options beyond the limits of traditional gender roles. These writing-intensive courses help students consider the differences gender and sexuality make—in family relationships, friendships, education, and work. These classes are comfortable settings for delving into scholarship and theory.

In addition to the interdisciplinary introductory courses on women's, gender and LGBT studies, courses in the program include women's history, philosophy, literature, sociology, psychology, physical education, and health. Honors modules are available for some classes. Opportunities to pursue independent study projects are also available. Service learning and internship opportunities are frequently offered.

Most courses fulfill General Education requirements in the humanities or behavioral and social sciences distribution areas as well as the College's multicultural requirement.

A certificate in women's studies can be earned by students who complete 18 or more credits in courses approved by the WGSP. These courses must include WMST 101, Introduction to Women's Studies. The WGSP also features speakers, seminars, and other programs, including active women's studies student clubs. Student awards and scholarships are presented annually.

For more information at the Germantown Campus, please visit the office at 225 Humanities and Social Sciences Building; for more information at the Takoma Park/Silver Spring Campus, please visit the office at 227 North Pavilion. The collegewide office, located in 212 Macklin Tower, Rockville Campus, provides academic advising and materials and information on upcoming events.

Curricula

Degrees, Certificates, and Letters of Recognition

A *curriculum* is a series of courses designed to assist students in reaching academic, transfer, specific technical, or semiprofessional career goals, as well as to assist undecided students. Montgomery College recognizes students with associate's degrees, certificates, and letters of recognition.

Associate's Degree

An associate's degree recognizes successful completion of a 60- to 70-credit combination of General Education courses in English, mathematics, arts, behavioral and social sciences, humanities, and science (see pages 77–80 for more information); courses in a specific track or skill area; and, in some cases, electives.

The College is currently authorized by the Maryland Higher Education Commission (MHEC) to offer five associate's degrees:

Associate of Arts (AA). This degree recognizes mastery in the liberal and fine arts and is intended for transfer to equivalent bachelor of arts programs at four-year schools. The AA is awarded in arts and sciences, business, computer gaming and simulation, computer science and technologies, and general studies. Tracks within these programs allow students to focus their studies in specific areas (for example, arts and sciences program—music track).

Associate of Science (AS). This degree recognizes mastery in science or technology with a heavy emphasis on undergraduate mathematics or science and is intended for transfer to bachelor of science programs at four-year institutions. The AS is awarded in engineering science, nursing, and science. Tracks within the engineering science and science programs allow students to focus their studies in specific areas (for example, engineering science program—aerospace engineering track).

Associate of Applied Science (AAS). This degree recognizes mastery of vocational-technical occupational skills and is intended for those seeking immediate employment opportunities. Students may still transfer eligible courses to four-year institutions offering upper-division programs in

related areas. Tracks within some AS programs allow students to focus their studies in specific areas (for example, graphic design program—illustration track).

Associate of Arts in Teaching (AAT). This degree recognizes mastery in a core of professional education coursework and fieldwork experiences appropriate for the first two years of teacher preparation. The program is intended to prepare students to transfer to an early childhood, elementary, or selected secondary education programs at a four-year college or university in the state of Maryland. Students who receive the AAT will have fulfilled their General Education requirements and earned acceptable scores on a state-approved basic skills test. The AAT offers a 2+2 program between community colleges and four-year colleges and universities, while enhancing our efforts at 2+2+2 collaborative programs with local K–12 schools.

Associate of Fine Arts (AFA). This degree recognizes mastery in the professional arts in programs that have as a primary goal transfer to a BFA program, are similar to the first two years of a BFA program, and require at least 60 percent of the course credit to be in studio work and related areas. The College offers two AFA degrees: graphic design and studio art.

Certificate

A certificate recognizes successful completion of a sequence of courses (a minimum of 12 credits) that focus on the development of specific technical skills.

Letter of Recognition

The letter of recognition is designed to provide students with a confirmation of the completion of a sequence of courses (6–11 credits) that teach focused skills and competencies in specific career areas. Students seeking only a letter of recognition, who are not planning to pursue a certificate or associate's degree at the College, are considered non–degree-seeking students and are not eligible for financial aid.

Campus Curricula Offerings

Some curricula are offered at all campuses, and some are limited to one or two. In this section of the catalog, when a curriculum is offered at a specific campus, it is indicated by G for Germantown, R for Rockville, or T for Takoma Park/Silver Spring. If there is no campus designation, all campuses may offer the curriculum. (Note that the graphic design AFA and the studio art AFA are offered at the School of Art + Design in Silver Spring as well as at the Germantown, Rockville, and Takoma Park/Silver Spring campuses.) Students may take appropriate courses offered on any campus to meet the requirements of the curriculum in which they are enrolled.

Choosing a Curriculum

Curricula at the College are designed to serve a variety of individual educational needs, including preparation for transfer, and for specific technical or semiprofessional careers. Students should consider their needs, interests, goals, experience, and training in selecting a curriculum. Counselors and academic advisers can aid in the selection process. If a student wishes to change from one curriculum to another, he or she must receive approval of an academic adviser or counselor. Counselors can assist students in determining whether a change in curriculum may result in a loss of credit.

Undecided Students

Students uncertain of their goals may obtain career exploration assistance at Montgomery College. Assistance may be provided by the Career/Transfer Centers, counseling services, academic faculty in areas of interest, workshops on career exploration, and career development courses. Students should also read the following section on selecting a major. Using the general studies curriculum, the student and counselor can design a program of courses to meet career or transfer goals.

Selecting a Major

Many students come to college without clearly defined career goals. The first step toward academic and career success is to select a field that matches a person's skills, interests, and values. There are several computerized guidance programs and pencil-and-paper inventories that can help students identify interests and match them with possible occupations. These programs are available in the Career/Transfer Center on any campus.

Gainful Employment Programs

Federal regulations require colleges to report information to the U.S. Department of Education (ED) and the public on "gainful employment" certificate programs. These programs prepare students for employment in recognized occupations. ED approves these programs for Title IV (federal) financial aid eligibility based on certain criteria. Not all certificate programs at Montgomery College are Title IV aid-eligible. Consequently, students are not eligible for financial aid if they are enrolled in certificate programs at Montgomery College that are not approved for Title IV aid.

Consumer information on each gainful employment certificate, including student completion rates, cost and length of each program, and the employment preparation in each program can be found in the official online catalog at *cms.montgomerycollege.edu/heoa.*

Learning Assessment

The College is committed to promoting student success and ensuring student retention while also continuing the institution's excellence, accountability, and continuous learning. To this end, practices and procedures have been established to ensure that faculty and administrators systemically and methodically assess student learning outcomes and review programs. All departments and administrative offices participate in the College Area Review, which evaluates each area of the College for collective improvement. In compliance with Middle States standards, the College requires that programs undergo Outcomes Assessment to assure that students are meeting program learning outcomes.

For more information about the College Area Review please visit the website *www.montgomerycollege.edu/outcome.*

For more information about Outcomes Assessment, visit *www.montgomerycollege.edu/car*.

Transfer to a Four-Year Institution

Montgomery College students transfer each year to four-year colleges and universities across the country. Students interested in transferring should consult with an adviser or counselor as early in their educational program as possible. Counselors can assist with course selection and academic planning to maximize the transfer of eligible credit at transfer institutions.

For students who plan to continue their education and transfer in a specific discipline (e.g., business administration, computer science, or engineering), the College offers degrees that provide the first two years of a four-year degree program as well as a general studies curriculum. In cases where Montgomery College does not offer a particular major the general studies curriculum can be used to meet transfer requirements. Counselors and academic advisers will assist students in planning; however, it is the responsibility of the students to meet the requirements of their intended transfer institutions. Students are encouraged to meet with a counselor or academic adviser each semester to determine the most appropriate transfer plan.

Transfer Agreements

The College is dedicated to creating partnerships with four-year colleges and universities that will create a clear transfer pathway for students. One important way of doing this is by forming transfer agreements, official agreements that match coursework between schools. These are designed to help students make a smooth transition when transferring from the College to a

four-year institution. Some agreements state that four-year schools will accept an entire associate's degree from the College. Other agreements outline specific courses to take at the College for transfer. Students can view the College's existing transfer agreements at *www.montgomerycollege.edu/agreements.*

Transfer Guidance

Montgomery College offers a variety of resources for transfer planning, including individual advising, transfer workshops, Career/Transfer Centers, and Transfer Days held every fall and spring. During Transfer Days students have an opportunity to meet with representatives from over 50 different transfer destinations. Web planning resources include:

- The Montgomery College transfer website (*www.montgomerycollege.edu/transfer*) includes information to help students research, select, and apply to colleges, and navigate the transfer process.
- ARTSYS (*http://artsys.usmd.edu*), the articulation system for Maryland colleges and universities, indicates which Montgomery College courses will be accepted for credit at most transfer institutions.
- The Montgomery College Transfer Times *(mc-transfer.blogspot.com).* Announcements and valuable transfer tips to help students prepare for transfer.
- The MC Transfer Scholarship Blog *(mctransferscholarships.blogspot.com).* Lists scholarships specifically for transfer students.
- Maryland's transfer website *(mdtransfer.usmd.edu)* contains links to Maryland colleges and universitites participating in ARTSYS.

Technical Training

Students who have specific technical career interests and wish to complete two years of study can choose from a wide range of occupational programs. These degree programs contain highly specialized technical courses and a strong component of general education courses to increase students' breadth of knowledge. The College also offers nondegree certificate curricula, in which students develop technical skills and expertise in a specific area.

Students enrolling in career/technical curricula should be aware that, in some of these curricula, there are specialized courses that are not usually acceptable for transfer to four-year colleges and universities.

The General Education Program

In the belief that all students who earn a degree from Montgomery College should exhibit both breadth and depth of knowledge, the College requires a General Education component in all degree programs. The goal of the General Education program is to provide all students, in both career and transfer curricula, with the foundation to live a productive life, to be a citizen of the world, to appreciate aesthetic values, and to engage in life-long learning in a continually changing world. For this reason, the General Education program requires courses across the arts and humanities, behavioral and social sciences, and natural sciences.

After completing the program, students will develop five competencies: skills in written and oral communication, scientific and quantitative reasoning, critical analysis and reasoning, technological competency, and information literacy. Students will also develop an awareness of the arts and an understanding of their personal, social, and civic responsibilities.

Global and Cultural Perspective Requirement

Students in associate of arts (AA) and associate of science (AS) programs will include one course designated as a "global and cultural perspectives" course from within the general education distribution areas. The course has a primary focus or provides in-depth study that leads students to an appreciation of the

differences, as well as commonalities, among people by studying the ideas, history, values, and/or creative expressions of diverse groups.

Transfer of General Education Courses

Montgomery College's General Education program meets the Maryland Higher Education Commission's (MHEC) Academic Regulations on General Education and Transfer and the Middle States accreditation General Education guidelines. MHEC transfer guidelines state that general education courses taken at one Maryland public college or university will transfer without further review to another Maryland public institution without the need for a course-to-course match. That is, a course designated as general education by a sending institution will fulfill a general education category requirement even if the receiving institution does not offer that specific course among general education choices.

Students interested in transferring to private or out-of-state schools should select General Education courses carefully. For more information about the General Education program and transfer, please visit *www.montgomerycollege.edu/gened.*

The General Education Program, 2014 – 2015

Component	Number of Credits Required				
Foundation	**AA**	**AAS**	**AAT**	**AFA**	**AS**
English	3	3	3	3	3
Health	1-3	1-3	1-3	0	1-3
Mathematics	3	3	3	3	3
Speech	3	3	3	0	3
Distribution					
Arts	3	0	3	3	3
Humanities	3	0	3	3	3
Either Arts or Humanities	3	3	3	3	0
Behavioral and Social Sciences	6*	3	6	3	6*
Natural Sciences	7†	4†	7†	3	8†
Total credits	**32-34**	**20-22**	**32-34**	**21**	**30-32**

Note: In all AA and AS curricula, students are required to select at least one course with a global and cultural perspectives designation.

* *The two three-credit-hour behavioral and social sciences courses must be from different disciplines.*

† *At least one lab science course must be taken to fulfill the natural sciences requirement.*

Foundation/Distribution Courses

English Foundation (ENGF)

Complete ENGL 101 as a College prerequisite for ENGL 102 or 103 unless eligible for placement into ENGL 102 or 103 through transfer credit, AP scores, or SAT/ Accuplacer scores and College English department permission.

ENGL	102	Critical Reading, Writing, and Research
ENGL	103	Critical Reading, Writing, and Research in the Work Place

Mathematics Foundation (MATF)

MATH	110	Survey of College Mathematics
MATH	113	Intro to Probability
MATH	115	Mathematical Ideas
MATH	115A	Mathematical Ideas
MATH	117	Elements of Statistics
MATH	117A	Elements of Statistics
MATH	130	Elements of Mathematics I: Mathematical Reasoning and Number Systems†
MATH	131	Elements of Mathematics II: Geometry and Algebra†
MATH	132	Elements of Mathematics III: Probability, Statistics, and Problem Solving†
MATH	150	Elementary Applied Calculus I
MATH	165	Precalculus
MATH	181	Calculus I
MATH	182	Calculus II

Speech Foundation (SPCF)

COMM	108	Intro to Human Communication
COMM	112	Business and Professional Communication

Health Foundation (HLHF)

Students may choose a 1- to 3-credit course to fulfill the Health Foundation requirement.

HLTH	100	Principles of Healthier Living
HLTH	105	Personal and Community Health
HLTH	113	First Aid and CPR
HLTH	121	Nutrition for Fitness and Wellness
HLTH	125	Personalized Health Fitness
HLTH	131	Drugs and Lifestyle Wellness
HLTH	150	Fitness and Nutrition for Weight Management
HLTH	160	Science and Theory of Health
HLTH	170	Intro to Aging
HLTH	200	Health Issues in Human Sexuality
HLTH	205	Health and Fitness for Teachers
HLTH	212	Controlling Stress and Tension
* HLTH	215	Women's Health
HLTH	220	Emergency Medical Responders
HLTH	225	Intro to Health Behaviors
HLTH	230	Health in the Later Years

Arts Distribution (ARTD)

ARTT	100	Intro to Drawing
ARTT	102	Design Studio: Two-Dimensional Design
ARTT	105	Color Theory and Application
ARTT	112	Digital Photography for Fine Arts I
ARTT	120	Ceramics I
ARTT	123	Crafts
* ARTT	127	Art Appreciation (Art in Culture)
ARTT	152	Photographic Expression I
* ARTT	200	Art History: Ancient to 1400
* ARTT	201	Art History: 1400 to Present
* ARTT	225	World Woodcut and Relief Traditions
ARTT	247	Weaving and Textiles
ARTT	265	Architectural History: Ancient to 1400
ARTT	266	Architectural History: 1400 to Present
* ARTT	270	Survey of African Art
* ARTT	272	Survey of Asian Art
ARTT	275	Italian Renaissance Art
ARTT	279	American Art
ARTT	283	American Art Since 1945

† MATH 130, 131, and 132 are required for the associate of arts in teaching (AAT). Many transfer institutions will not accept MATH 130, 131, or 132 as a general education math course if an AAT is not completed.

**** Courses marked with an asterisk fulfill the General Education global and cultural perspectives requirement. Denoted by M in course description.***

	ARTT	280	Modern Art: Its Origins and Development
	DANC	100	Intro to Dance
	ENGL	235	Film and Literature
	ENGL	264	Intro to Creative Writing of Fiction
	ENGL	272	Intro to Creative Writing of Poetry
	FILM	110	Intro to Film
	GDES	120	Intro to Digital Arts
	IDES	211	Historic Interiors I
	IDES	212	Historic Interiors II
	ISTD	173	Integrated Arts
	MUSC	110	Listening to Music
*	MUSC	117	World Music
*	MUSC	125	History of Jazz
*	MUSC	131	American Popular Music
	PHOT	150	Photography I
	PHOT	161	Intro to Digital Photography
	THET	100	Intro to the Theatre
	THET	110	Fundamentals of Acting
	TVRA	134	Media Appreciation

Humanities Distribution (HUMD)

*	ARAB	101	Elementary Arabic I
*	ARAB	102	Elementary Arabic II
*	ASLP	100	ASL I
*	ASLP	110	ASL II
*	CHIN	101	Elementary Chinese I
*	CHIN	102	Elementary Chinese II
*	CHIN	201	Intermediate Chinese I
*	CHIN	202	Intermediate Chinese II
*	ENGL	122	Intro to World Mythology
	ENGL	190	Intro to Literature
*	ENGL	201	Intro to World Literature I
*	ENGL	202	Intro to World Literature II
*	ENGL	205	Masterpieces of Asian Literature
*	ENGL	208	Women in Literature
	ENGL	211	Survey of American Literature I
	ENGL	212	Survey of American Literature II
	ENGL	213	Survey of British Literature I
	ENGL	214	Survey of British Literature II
	ENGL	220	The American Novel
*	ENGL	223	Intro to Asian American Literature
	ENGL	226	Survey of African American Literature I
	ENGL	227	Survey of African American Literature II
	ENGL	230	Intro to Modern Drama
	ENGL	231	Intro to Modern Poetry
	ENGL	233	The Short Story
	ENGL	241	American Literature of Nature & the Environment
	ENGL	245	The Bible as Literature
*	ENGL	248	Literature of the Holocaust
*	FREN	101	Elementary French I
*	FREN	102	Elementary French II
*	FREN	201	Intermediate French I
*	FREN	202	Intermediate French II
*	FREN	207	Readings in French Literature
*	FREN	208	Readings in French Literature
*	GERM	101	Elementary German I
*	GERM	102	Elementary German II
*	GERM	201	Intermediate German I
*	GERM	202	Intermediate German II
*	HIST	112	Women in World History
*	HIST	114	The World in the 20th Century
*	HIST	116	World History to A.D. 1500
*	HIST	117	World History from A.D. 1500
*	HIST	128	Women in the Western World
*	HIST	145	Latin American History
	HIST	146	History of the Ancient World
	HIST	147	History of Europe to 17th Century
	HIST	148	History of Europe from 17th Century
	HIST	190	History of Sport in America
	HIST	200	History of the United States to 1865
	HIST	201	History of the United States from 1865
	HIST	205	Technology & Culture in the Western World
*	HIST	209	History of Asian Americans
*	HIST	211	History of Latinos in the U.S.
	HIST	233	Alternative Lifestyles: 19th Century American Utopias
*	HIST	235	The History of African Americans to 1865
*	HIST	236	The History of African Americans since 1865
*	HIST	240	Civil Rights in America
*	HIST	247	East Asian Civilization
*	HIST	250	Modern Asia

**** Courses marked with an asterisk fulfill the General Education global and cultural perspectives requirement. Denoted by M in course description.***

	HIST	252	The United States & 20th Century World Affairs
*	HIST	255	Conflict in the Modern Middle East
	HIST	257	Modern Military History 1494-1815
	HIST	258	Modern Military History 1815 – Present
	HIST	260	The United States since 1945
	HIST	262	The History of England 55 B.C. to 1688
	HIST	263	The History of England 1688 to the Present
*	HIST	265	African History to 1800
*	HIST	266	African History from 1800
*	ITAL	101	Elementary Italian I
*	ITAL	102	Elementary Italian II
*	KORA	101	Elementary Korean I
*	KORA	102	Elementary Korean II
*	LING	200	Intro to Linguistics
*	LATN	101	Elementary Latin I
*	LATN	102	Elementary Latin II
	PHIL	101	Intro to Philosophy
	PHIL	140	Intro to the Study of Ethics
*	PHIL	143	Intro to the Study of Religion
	PHIL	190	Elementary Logic and Semantics
	PHIL	201	Morality and Contemporary Law
	PHIL	205	Philosophy in Literature
*	PHIL	212	Women in Philosophy I
*	PHIL	218	Women in Philosophy II
*	PORT	101	Elementary Portuguese I
*	PORT	102	Elementary Portuguese II
*	RUSS	101	Elementary Russian I
*	RUSS	102	Elementary Russian II
*	RUSS	201	Intermediate Russian I
*	RUSS	202	Intermediate Russian II
*	SPAN	101	Elementary Spanish I
*	SPAN	102	Elementary Spanish II
*	SPAN	103	Intensive Elementary Spanish
*	SPAN	106	Spanish for Heritage Speakers
*	SPAN	201	Intermediate Spanish I
*	SPAN	202	Intermediate Spanish II
*	SPAN	215	Advanced Spanish Conversation & Composition
*	SPAN	216	Advanced Readings in Spanish Literature
*	WMST	101	Intro to Women's Studies

Behavioral and Social Sciences Distribution (BSSD)

If a degree requires two BSSD courses, they must come from two different disciplines.

*	ANTH	201	Intro to Sociocultural Anthropology
*	ANTH	256	World Cultures
*	ASLP	121	Intro to the Deaf Culture
*	CCJS	110	Administration of Justice
*	ECON	103	The Evolution of Economic Societies
	ECON	105	Basic Economics
	ECON	201	Principles of Economics I
	ECON	202	Principles of Economics II
	GEOG	101	Intro to Geography
	GEOG	105	Cultural Geography
	GEOG	113	Economic Geography
*	GEOG	130	Global Geography
	POLI	101	American Government
	POLI	105	Intro to Political Science
*	POLI	203	International Relations
*	POLI	206	Political Ideologies
*	POLI	211	Comparative Politics & Governments
	POLI	221	Western Political Thought
	POLI	242	State and Local Government
*	POLI	252	Race and Ethnicity in U.S. Politics
*	POLI	256	Politics of the Third World
	PSYC	102	General Psychology
*	SOCY	100	Intro to Sociology
*	SOCY	105	Social Problems and Issues
*	SOCY	208	Sociology of Gender
*	SOCY	214	Sociology of the Family
*	SOCY	233	Race and Ethnic Relations
*	SOCY	240	Sociology of Age and Aging
*	SOCY	243	The Sociology of Sport
*	SOCY	250	Globalization Issues

**** Courses marked with an asterisk fulfill the General Education global and cultural perspectives requirement.***

Natural Sciences Distribution with Lab (NSLD)

If a degree requires two science courses, one must be a laboratory science (NSLD).

AOSC	105	Meteorology: An Intro to Weather
ASTR	101	Intro to Astronomy
ASTR	202	Intro to Modern Astronomy
BIOL	101	General Biology
BIOL	105	Environmental Biology
BIOL	106	Environmental Biology Laboratory (must be taken with BIOL 105 for Laboratory credit)
BIOL	130	The Human Body
BIOL	131	The Human Body Laboratory (must be taken with BIOL 130 for Laboratory Credit).
BIOL	150	Principles of Biology I
BIOL	151	Principles of Biology II
BIOL	207	Ecology
BIOL	212	Human Anatomy & Physiology I
BIOL	213	Human Anatomy & Physiology II
CHEM	109	Chemistry and Society
CHEM	109L	Chemistry and Society Laboratory (must be taken with CHEM 109 for Laboratory credit)
CHEM	115	Survey of Organic and Biological Chemistry
CHEM	131	Principles of Chemistry I
CHEM	132	Principles of Chemistry II
CHEM	150	Essentials of Organic and Biochemistry
GEOG	124	Physical Geography
GEOL	101	Physical Geology
GEOL	102	Historical Geology
LNTP	100	Introduction to Plant Sciences
PHYS	110	Sound and Lights in the Arts
PHYS	203	General Physics I
PHYS	204	General Physics II
PHYS	262	General Physics II: Electricity and Magnetism
PHYS	263	General Physics III: Waves, Optics, and Modern Physics
PSCI	101	Physical Science I
PSCI	102	Physical Science II

Natural Sciences Distribution without Lab (NSND)

	AOSC	100	Weather and Climate
*	ANTH	215	Human Evolution and Archaeology
	BIOL	114	Understanding Viruses
	BIOL	105	Environmental Biology
	BIOL	108	Marine Environmental Science
	BIOL	111	Natural Science of the Chesapeake Bay
	BIOL	130	The Human Body
	CHEM	109	Chemistry and Society
	ENES	100	Intro to Engineering Design
	NUTR	101	Intro to Nutrition
	PHYS	105	Conceptual Physics
	PHYS	161	General Physics I: Mechanics and Heat

**** Courses marked with an asterisk fulfill the General Education global and cultural perspectives requirement.***

Curricula Summary by Program Area

Title	AA	AAS	AAT	AFA	AS	C	L	Page
Accounting		301				167		95, 96
American Sign Language	608					220		96, 97
Applied Geography								
Applied Geography		344						98
Cartography and Geographic Information Systems						184		99
Geographic Education						183		100
Architectural Technology								
Architectural Technology		302						101
CAD for the Building Professional						203		102
Sustainability							820	103
Art								
Art	003							104
Art History	059							105
Studio Art				910				106
Automotive Technology								
Automotive Electrical Systems Specialist						162		108
Automotive Technology		307						107
Engine Performance Specialist						160A		108
Powertrain Specialist						161A		109
Undercar Specialist						163A		109
Biotechnology								
Biotechnology		334				219		110, 111
Biomanufacturing						246		111
Building Trades Technology								
Building Trades Technology		308†						112
Carpentry						179A	810A	114
Electrical Wiring						245	807A	115
HVAC						244	808A	116, 116
Residential Remodeling and Repair						236A	818	117, 117

† Programs with this notation include specialized tracks. Students interested in pursuing studies in a specialized track should refer to the individual curricula for detailed information and the appropriate admissions code.

‡ See the appropriate curriculum description for information on the admissions codes necessary for students planning to pursue a degree in any of the health sciences.

Curricula Summary by Program Area

Title	AA	AAS	AAT	AFA	AS	C	L	Page
Business								
Business	006							118
Communication and Broadcast Technology								
Broadcast Journalism						207		120
Digital Multimedia Production						214		121
Radio		309						122
Radio Production						208		123
Television		310						124
Television Production						209		125
Communication Studies	609							126
Computer Applications								
Computer Applications		311†						127
Database Systems						238		129
Information Technology						213		130
Computer Gaming and Simulation—*see also* **Web Careers**	606†							131
Computer Publishing and Printing Management								
Electronic Imaging Prepress						197		134
Printing Technology						176		135
Computer Science and Technologies								
Computer Programming						108		138
Computer Science	107							136
Information Systems	109							137
Construction Management								
Management of Construction		303				142		138, 140
Criminal Justice		314						141
Cybersecurity								
Cybersecurity		356A						142
Advanced Network Security						252		143
Cisco Certified Network Associate + Security Preparation						253		144

* School of Art + Design program.

† Programs with this notation include specialized tracks. Students interested in pursuing studies in a specialized track should refer to the individual curricula for detailed information and the appropriate admissions code.

‡ See the appropriate curriculum description for information on the admissions codes necessary for students planning to pursue a degree in any of the health sciences.

Curricula Summary by Program Area

Title	AA	AAS	AAT	AFA	AS	C	L	Page
Education								
Early Childhood Education Technology		315						148
Early Childhood Education						177		150
Early Childhood Leadership and Management							819	151
Early Childhood Education/Early Childhood Special Education			604					152
Elementary Education/ Elementary Special Education			601A					153
Secondary Education — Chemistry			610					155
Secondary Education — English			607					156
Secondary Education — Mathematics			605					157
Secondary Education — Physics			603					158
Secondary Education — Spanish			602					160
Emergency Preparedness Management		414				249		161, 162
Engineering Science								
Aerospace Engineering					408			163
Bioengineering					411A			165
Chemical Engineering					406			166
Civil Engineering					407			167
Computer Engineering					409			168
Electrical Engineering					402			169
Fire Protection Engineering					403			170
General Engineering					410			174
Materials Science and Engineering					413			171
Mechanical Engineering					404			172
Nuclear Engineering					405			173
Ethnic Social Studies						241	816	175, 176
Fire Science and Emergency Services Management		346A				240		177, 178
Emergency Medical Technician							811	180
Fire and Arson Investigation						180		179
Fire Prevention Technology		321				247		181, 182

* School of Art + Design program.

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Curricula Summary by Program Area

Title	AA	AAS	AAT	AFA	AS	C	L	Page
Fire Protection Technology		322				248		183, 184
General Studies	129							185
Geography—*see* **Applied Geography**								
Graphic Design		304A		902A*				186, 187
Computer Graphics: Art and Animation						175		188
Graphic Design with Digital Tools						239		189
Illustration		305						190
Health Enhancement, Exercise Science, & Physical Education								
Advanced Personal Trainer						191B		194
Aging Studies							822	195
Health Fitness	157B							191
Health Education	186							193
Personal Trainer Examination Preparation							821	195
Physical Education Teacher Education	159A							196
Health Sciences								
Diagnostic Medical Sonography	‡							146
Health Information Management		‡						198
Medical Coder/Abstractor/Biller						218		200
Mental Health Associate		‡						219
Nursing					‡			229
Physical Therapist Assistant		‡						239
Polysomnography Technology						535		241
Radiologic (X-Ray) Technology		‡						242
Surgical Technology		‡						248
Hospitality Management								
Food and Beverage Management						055	814	203, 204
Hospitality Management		347†						201
Hospitality Supervision and Leadership						233	813	205, 206
Meeting, Conference, and Event Planning						237	815	206, 207

* School of Art + Design program.

† Programs with this notation include specialized tracks. Students interested in pursuing studies in a specialized track should refer to the individual curricula for detailed information and the appropriate admissions code.

‡ See the appropriate curriculum description for information on the admissions codes necessary for students planning to pursue a degree in any of the health sciences.

Curricula Summary by Program Area

Title	AA	AAS	AAT	AFA	AS	C	L	Page
Interior Design								
Advanced Interior Design						224		212
Design Industry Partnership						225		213
Interior Design — Preprofesional	102	306†						208, 209
Introductory Interior Design						226		211
Landscape Technology		328				140		214, 215
Liberal Arts and Sciences								
International Studies	152							216
Music	054					204		220, 222
Management								
Management						145		217
Supervisory							805A	218
Music—*see* **Liberal Arts and Sciences**								220
Network and Wireless Technologies								
IT Professional + Certificate						254		223
Network and Wireless Technologies		354†						224
Network Engineer						215†		227
Wireless Technologies						227		228
Nursing—*see* **Health Sciences**								
Paralegal Studies								
Paralegal Studies		341				156		231, 232
Legal Analysis							804	233
Photography								
Electronic Photography						193		235
Photographic Techniques						194		236
Photography		342						233
Photography Master						196		237
Portrait, Fashion, and Photojournalism						172		238
Pre-Dentistry —*see* **Science**								

* School of Art + Design program.

† Programs with this notation include specialized tracks. Students interested in pursuing studies in a specialized track should refer to the individual curricula for detailed information and the appropriate admissions code.

‡ See the appropriate curriculum description for information on the admissions codes necessary for students planning to pursue a degree in any of the health sciences.

Curricula Summary by Program Area

Title	AA	AAS	AAT	AFA	AS	C	L	Page
Pre-Medical Technology —*see* **Science**								
Pre-Medicine —*see* **Science**								
Pre-Optometry —*see* **Science**								
Pre-Pharmacy —*see* **Science**								
Radio—*see* **Communication and Broadcast Technology**								
Science								
Chemistry and Biochemistry					412D			244
Environmental Science and Policy					412E			245
Life Science					412A			246
Mathematics					412B			247
Physics					412C			248
Technical Writing						143		250
Television—*see* **Communication and Broadcast Technology**								
Theatre								
Dance	128							251
Theatre Performance	011							252
Theatre Technical	014							253
Transfer Studies						234		254
Web Careers								
Internet Games and Simulation						232		256
Java Developer						250		257
Digital Web and Technology		353†						255
Web Design						229A		258
Web Development						231A		259
Web Programming						230		260
Women's Studies						251		261

* School of Art + Design program.

† Programs with this notation include specialized tracks. Students interested in pursuing studies in a specialized track should refer to the individual curricula for detailed information and the appropriate admissions code.

‡ See the appropriate curriculum description for information on the admissions codes necessary for students planning to pursue a degree in any of the health sciences.

Alphabetical List of Curricula

Title	Type(s) of Program	POS Code	Page
Accounting	AAS, C	301, 167	95
Advanced Interior Design	C	224	212
Advanced Network Security	C	252	
Advanced Personal Trainer	C	191B	194
Aging Studies	LOR	822	195
American Sign Language	AAS, C	608, 220	96
Applied Geography	AAS, C (2)	344, 184, 183	98
Architectural Technology	AAS, C, L	302, 203, 142	101
Art (see also Studio Art)	AA, AFA(2)		104
Art	AA	003	104
Art History	AA	059	105
Automotive Electrical Systems Specialist	C	162	108
Automotive Technology	AAS, C (4)		107
Automotive Technology	AAS	307	107
Bioengineering	AS	411A	165
Biotechnology	AAS, C (2)	334, 219, 246	110
Biomanufacturing	C	246	111
Broadcast Journalism	C	207	120
Building Trades Technology	AAS, C (4), L (4)		112
Building Trades Technology	AAS	308*	112
Business	AA	006	118
CAD for the Building Professional	C	203	102
Carpentry	C, L	179A, 810A	114
Cartography and Geographic Information Systems	C	184	99
Chemistry and Biochemistry	AS	412D	244
Cisco Certified Network Associate + Security Preparation	C	253	
Communication and Broadcasting Technology	AAS, C (4)		119
Communication Studies	AA	609	126
Computer Applications	AAS, C (2)	311*, 238, 213	127
Computer Applications	AAS	311*	127
Computer Gaming and Simulation	AA	606*	131
Computer Graphics: Art and Animation	C	175	188
Computer Programming	C	108	138
Computer Science	AA	107	136
Computer Science and Technologies	AA, C	107, 109, 108	135

Note: In the column for type(s) of program, C = certificate and L = letter of recognition. POS codes are listed for specific curricula; general curricular areas (in italics) that include multiple curricula do not have POS codes.
** Programs with this notation include specialized tracks. Students interested in pursuing studies in a specialized track should refer to the individual curricula for detailed information and the appropriate admissions code.*
† See the curriculum description for information on the POS code.

Alphabetical List of Curricula

Title	Type(s) of Program	POS Code	Page
Construction Management	AAS, C	303, 142	138
Criminal Justice	AAS	314	141
Cybersecurity	AAS, C (2)	252, 253, 356A	142
Dance	AA	128	251
Database Systems	C	238	129
Design Industry Partnership	C	225	213
Diagnostic Medical Sonography	AAS	†	146
Diagnostic Medical Sonography	AAS	†	146
Digital Multimedia Production	C	214	121
Digital Web and Media Technology	AAS	353*	
Early Childhood Education	C	177	150
Early Childhood Education/Early Childhood Special Education	AAT	610	
Early Childhood Education Technology	AAS	315	148
Education	AAS, AAT (7), C, L		148
Electrical Wiring	C, L	245, 807A	115
Electronic Imaging Prepress	C	197	134
Elementary Education/ Elementary Special Education	AAT	601A	153
Emergency Management Preparedness	AAS, C	414, 249	162
Emergency Medical Technician	L	811	180
Electronic Photography	C	193	235
Engine Performance Specialist	C	160A	108
Engineering, Aerospace	AS	408	163
Engineering, Bioengineering	AS	411A	165
Engineering, Chemical	AS	406	166
Engineering, Civil	AS	407	167
Engineering, Computer	AS	409	168
Engineering, Electrical	AS	402	169
Engineering, Fire Protection	AS	403	170
Engineering, General	AS	410	174
Engineering, Materials Science and Engineering	AS	413	171
Engineering, Mechanical	AS	404	172
Engineering, Nuclear	AS	405	173
Engineering Science	AS		163

Note: In the column for type(s) of program, C = certificate and L = letter of recognition. POS codes are listed for specific curricula; general curricular areas (in italics) that include multiple curricula do not have POS codes.
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Alphabetical List of Curricula

Title	Type(s) of Program	POS Code	Page
Environmental Science and Policy	AS	412E	245
Ethnic Social Studies	C, L	241, 816	175
Fire and Arson Investigation	C	180	179
Fire Prevention Technology	AAS, C	321, 247	181
Fire Protection Technology	AAS, C	322, 188	183
Fire Science and Emergency Services Management	AAS (3), C (4)		177
Fire Science and Emergency Services Management	AAS	346A	178
Fire and Emergency Services Management	C	240	180
Food and Beverage Management	C, L	055, 814	203
General Studies	AA	129	185
Geographic Education	C	183	100
Graphic Design	AFA, AAS (2), C (2)		186
Graphic Design	AAS	304A	186
Graphic Design, School of Art + Design	AFA	902A	187
Graphic Design with Digital Tools	C	239	189
Health Education	AA	186	193
Health Enhancement, Exercise Science, and Physical Education	AA, C		191
Health Fitness	AA	157A	191
Health Information Management	AAS, C	†	198
Hospitality Management	AAS, C (3), L (3)		201
Hospitality Management	AAS	347*	201
Hospitality Supervision and Leadership	C, L	233, 813	205
HVAC	C, L	244, 808A	116
Illustration	AAS	305	190
Information Systems	AA	109	137
Information Technology	C	213	130
Interior Design	AA, AAS C (3)		208
Interior Design, Advanced	C	224	212
Interior Design, Introductory	C	226	211
Interior Design, Industry Partnership	C	225	213
Interior Design—Preprofessional	AA, AAS	102, 306*	208
International Studies	AA	152	216
Internet Games and Simulation	C	232	256
IT Professional +	C	254	
Java Developer	C	250	257

Note: In the column for type(s) of program, C = certificate and L = letter of recognition. POS codes are listed for specific curricula; general curricular areas (in italics) that include multiple curricula do not have POS codes.
** Programs with this notation include specialized tracks. Students interested in pursuing studies in a specialized track should refer to the individual curricula for detailed information and the appropriate admissions code.*
† See the curriculum description for information on the POS code.

Alphabetical List of Curricula

Title	Type(s) of Program	POS Code	Page
Landscape Technology	AAS, C	328, 140	214
Legal Analysis	L	804	233
Liberal Arts and Sciences	AA	152	216
Life Science	AS	412A	246
Management	C, L	145, 805A	217
Mathematics	AS	412B	247
Medical Coder/Abstractor/Biller	C	218	200
Meeting, Conference and Event Planning	C, L	237, 815	206
Mental Health Associate	AAS	†	219
Music	AA, C	054, 204	220
Network Engineer	C	215*	227
Network and Wireless Technologies	AAS, C (3)		223
Network and Wirelss Technologies	AAS	354*	224
Nuclear Engineering	AS	405	173
Nursing	AS	†	229
Paralegal Studies (see also Legal Analysis)	AAS, C, L	341, 156, 804	231
Personal Trainer Examination Preparation	L	821	196
Photographic Techniques	C	194	236
Photography	AAS, C (4)		233
Photography	AAS	342	233
Photography Master	C	196	237
Physical Education Teacher Education	AA	159A	196
Physical Therapist Assistant	AAS	†	239
Physics	AS	412C	248
Polysomnography Technology	C	535	241
Portrait, Fashion, and Photojournalism	C	172	238
Powertrain Specialist	C	161A	109
Pre-Dentistry *(see Life Science)*	AS	412A	
Pre-Medical Technology *(see Life Science)*	AS	412A	
Pre-Medicine *(see Life Science)*	AS	412A	
Pre-Optometry *(see Life Science)*	AS	412A	
Pre-Pharmacy *(see Life Science)*	AS	412A	
Printing Technology	C	176	135
Radio	AAS	309	122
Radio Production	C	208	123
Radiologic (X-Ray) Technology	AAS	†	242

Note: In the column for type(s) of program, C = certificate and L = letter of recognition. POS codes are listed for specific curricula; general curricular areas (in italics) that include multiple curricula do not have POS codes.
** Programs with this notation include specialized tracks. Students interested in pursuing studies in a specialized track should refer to the individual curricula for detailed information and the appropriate admissions code.*
† See the curriculum description for information on the POS code.

Alphabetical List of Curricula

Title	Type(s) of Program	POS Code	Page
Residential Remodeling and Repair	C, L	236A, 818	117
School of Art + Design	AFA (2)	910, 902A	106, 187
Science	AS (5)		244
Secondary Education — Chemistry	AAT	610	155
Secondary Education — English	AAT	607	156
Secondary Education — Mathematics	AAT	605	157
Secondary Education — Physics	AAT	603	158
Secondary Education — Spanish	AAT	602	160
Studio Art	AFA	910	106
Supervisory	L	805A	218
Surgical Technology	AAS	†	248
Sustainability	L	820	103
Technical Writing	C	143	250
Television	AAS	310	124
Television Production	C	209	125
Theatre	AA	128, 011, 014	251
Theatre Performance	AA	011	252
Theatre Technical	AA	014	253
Transfer Studies	C	234	254
Undercar Specialist	C	163A	109
Web Careers	AAS, C (5)		255
Web Design	C	229A	258
Web Development	C	231A	259
Web Programming	C	230	260
Wireless Technologies	C	227	228
Women's Studies	C	251	261

Note: In the column for type(s) of program, C = certificate and L = letter of recognition. POS codes are listed for specific curricula; general curricular areas (in italics) that include multiple curricula do not have POS codes.
** Programs with this notation include specialized tracks. Students interested in pursuing studies in a specialized track should refer to the individual curricula for detailed information and the appropriate admissions code.*
† See the curriculum description for information on the POS code.

Statewide Programs

The Maryland Higher Education Commission designates some community college programs as statewide programs. Students may enroll in any of these programs at the same rates as in-county residents if a particular program is not offered by the local community college, or if the student cannot enroll due to an enrollment limit. These programs are subject to change; apply at the Office of Admissions and Records.

Montgomery College programs approved as statewide are

- Fire and Arson Investigation (Certificate)
- Fire and Emergency Services Management (AAS)
- Fire Prevention Technology (AAS and Certificate)
- Fire Protection Technology (AAS and Certificate)
- Graphic Design (AFA)
- Studio Art (AFA)
- Technical Writing (Certificate)

Allegany College of Maryland
- Automotive Technology
- Culinary Arts
- Directed Technology (Travel/Tourism)
- Forest Technician
- Hotel and Restaurant Management
- Professional Golf Management
- Therapeutic Massage
- Tree Care Technology

Anne Arundel Community College
- Alternative and Sustainable Energy Systems
- Homeland Security Management
- Hotel/Restaurant Management
- Intelligence Analytics
- Paralegal Studies
- Therapeutic Massage
- Transportation, Logistics, & Cargo Security

Cecil Community College
- Government Contracting
- Transportation and Logistics
- Visual Communications

College of Southern Maryland
- Commercial Vehicle Operator
- Massage Therapy
- Security Management

Community College of Baltimore County
- Air Traffic Control
- Automotive
- Aviation
- Child and Youth Care Practitioner
- Construction
- Geospacial Applications
- Floral Design
- Horticulture
- Interpreter Preparation
- Labor Studies
- Landscape and Survey
- Mortuary Science
- Nursery & Greenhouse
- Print Management Technology
- Recreation, Parks and Tourism
- Tourism and Travel

Frederick Community College
- Emergency Management

Garrett College
- Adventure Sports Management
- Juvenile Justice
- Natural Resources and Wildlife Technology

Hagerstown Community College
- Facilities Maintenance
- Industrial Technology

Harford Community College
- High Performance Manufacturing
- Technical Professional Studies

Prince George's Community College
- Theatre and Entertainment

Wor-Wic Community College
- Criminal Justice
- Hotel-Motel-Restaurant Management

Health Workforce Shortage Programs

Health Workforce Shortage Programs have been identified by the Maryland Higher Education Commission. Maryland residents may enroll in any of these programs and pay the in-county tuition rate of each school on a space-available basis. These programs are subject to change.

The following Montgomery College programs have been identified as Health Workforce Shortage:

- Biotechnology (AAS)
- Diagnostic Medical Sonography (AAS)
- Health Information Management (AAS)
- Medical Coder/Abstractor/Biller (Certificate)
- Mental Health Associate (AAS)
- Nursing (AAS)
- Physical Therapist Assistant (AAS)
- Polysomnography (Certificate)
- Radiologic (X-Ray) Technology (AAS)
- Surgical Technology (AAS)

For more information, please contact the Office of Admissions and Records.

Allegany College of Maryland
- Basic Medical Transcription
- Dental Hygiene
- Home Health Aide
- Human Services
- Medical Assistant
- Medical Coding
- Medical Laboratory Technology
- Nursing
- Occupational Therapy Assistant
- Pharmacy
- Physical Therapy Assistant
- Radiologic Technology
- Respiratory Therapist

Anne Arundel Community College
- EMT
- Human Services
- Medical Assisting
- Medical Coding
- Nursing
- Pharmacy Technician
- Physical Therapy Assistant
- Physician Assistant
- Radiologic Technology

Baltimore City Community College
- Coding Specialist (Medical)
- Dental Hygiene
- Emergency Medical Service
- Emergency Medical Technician
- Health Information Technology
- Nursing
- Physical Therapist Assistant
- Respiratory Care

Carroll Community College
- Health Information Technology—Medical Records
- Nursing
- Physical Therapist Assistant

Cecil College
- Emergency Medical Technician
- Nursing
- Physical Therapist Assistant

Chesapeake College
- Emergency Medical Services
- EMT-Paramedic
- Human Services
- Nursing
- Physical Therapist Assistant
- Radiologic Sciences

College of Southern Maryland
- Emergency Medical Services
- Human Services
- Nursing
- Medical Coding Specialist
- Medical Assistant and Laboratory Technician
- Physical Therapy Assistant

Community College of Baltimore County
- Chemical Dependency Counseling
- Dental Hygiene
- Emergency Medical Technician
- Health Informatics and Information Technology
- Medical Laboratory Technology
- Medical Office Assistant
- Mental Health
- Nursing
- Occupational Safety and Therapy
- Physician Assistant
- Radiation Therapy
- Radiography
- Respiratory Care Therapy

Frederick Community College
- Emergency Medical Technician Services
- Nuclear Medicine Technology
- Nursing
- Medical Assistant
- Respiratory Therapy

Hagerstown Community College
- Emergency Medical Technology
- Medical Assistant
- Medical Coding
- Medical Transcription
- Nursing
- Radiography
- Paramedic Emergency Services

Harford Community College
- Nursing
- Medical Assisting

Howard Community College
- Cardiovascular Technology
- EMT
- Nursing
- Radiologic Technology

Prince George's Community College
- EMT
- Health Information Technology
- Nuclear Medicine Technology
- Nursing
- Radiography
- Respiratory Therapy

Wor-Wic Community College
- Emergency Medical Services
- Nursing
- Radiologic Technician

Please see MHEC's website at *www.mhec.state.md.us/higherEd/HEPrograms.asp* for the most current listing of statewide programs and Health Workforce Shortage Programs.

ACCOUNTING

Accounting AAS (G, R): 301

This curriculum is designed to prepare students for a career in accounting. It is suitable for the needs of business enterprises, nonprofit private organizations, and all levels of government. Graduates may find employment in such areas as accounting, finance, treasury, auditing, tax, cost, and systems. Completion of all requirements for this curriculum will lead to the AAS in accounting.

This curriculum is not intended for transfer to a four-year college or university. Students interested in a baccalaureate degree in accounting should enroll in the business transfer program.

For students who have a baccalaureate degree, the accounting courses included in the curriculum fulfill some of the course requirements to sit for the Certified Public Accountant (CPA) examination. All additional course requirements for the exam are offered by the College. Students should contact an academic adviser for more information. Requirements to sit for the CPA examination vary by state. Consult your State Board of Public Accountancy for current requirements.

A suggested course sequence for full-time students follows; part-time students should consult an adviser.

FIRST SEMESTER

ACCT	221	Accounting I 4
BSAD	101	Introduction to Business
		or
MGMT	101	Principles of Management 3
ENGL	101	Introduction to College Writing* 3
		Mathematics foundation 3
		CMAP or CMSC Elective 3

SECOND SEMESTER

ACCT	222	Accounting II 4
		ECON elective (Behavioral and social sciences distribution)† 3
		English foundation 3
		Speech foundation 3
		Arts or humanities distribution 3

THIRD SEMESTER

ACCT	231	Intermediate Accounting I 4
MGMT	201	Business Law 3
		Health foundation 1-3
		Electives‡ 6

FOURTH SEMESTER

ACCT	232	Intermediate Accounting II. 4
ACCT	239	Business Finance 3
		Natural sciences distribution with lab 4
		Elective‡ 3

TOTAL CREDIT HOURS 60–62

* ENGL 101, if needed, for ENGL 102/103 or general elective.
† Select ECON 105, ECON 201, or ECON 202.
‡ Select any accounting course numbered 209 or higher (except ACCT 239), or a statistics course (BSAD 210 or MATH 117).

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify, measure, record, and communicate financial information relating to an organization.
- Interpret, analyze, and evaluate financial information relating to an organization.
- Assess national and international economic conditions, government policy, and the legal/regulatory framework as they impact business decision making.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ACCOUNTING

Accounting Certificate (G, R): 167

The accounting certificate curriculum is designed to serve those students who desire to upgrade their professional competence but do not want to complete the AAS For those who want to complete the U.S. Civil Service 24-hour accounting program, consult the Office of Personnel Management for a current listing of approved courses.

REQUIRED COURSES

ACCT 221 Accounting I 4
ACCT 222 Accounting II 4
ACCT 231 Intermediate Accounting I 4

ELECTIVES

Select four courses from accounting courses numbered 225 or higher or MGMT 201.

TOTAL CREDIT HOURS 24–25

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify, measure, record, and communicate financial information relating to an organization.
- Interpret, analyze, and evaluate financial information relating to an organization.
- Meet the qualifications for federal government accounting programs and upgrade professional competence.

AMERICAN SIGN LANGUAGE

American Sign Language AA(R): 608

The associate of arts degree program in American Sign Language is a transfer-degree program designed for students who plan to enter fields in which they would work with Deaf people on a daily basis. The program fosters the acquisition of the language and culture of the Deaf in the United States and Canada. Following the national standards established by the American Council on the Teaching of Foreign Languages, the program focuses on communication through the study of semantics, syntax, pragmatics, and culture. Following program completion, students would transfer to a four-year degree program majoring in American Sign Language, Deaf studies, Deaf education, interpreter education, or social work.

FIRST SEMESTER

ASLP 100 ASL I 3
ASLP 105 Visual Gestural Communication 3
ASLP 106 Fingerspelling and Number Use in ASL 3
ENGL 101 Introduction to College Writing* 3
PSYC 102 General Psychology (BSSD) 3

SECOND SEMESTER

ASLP 110 ASL II 3
ASLP 121 Introduction to the Deaf Culture and Community 3
English foundation 3
Mathematics foundation 3
National science distribution with lab 4

(Continued)

AMERICAN SIGN LANGUAGE

American Sign Language AA(R): 608 *(continued)*

THIRD SEMESTER

ASLP	200	ASL III	3
ASLP	205	Structural ASL I	3
ASLP	207	ASL Translation and Interpretation	3
		Arts distribution	3
		Health foundation	1

FOURTH SEMESTER

ASLP	206	Structural ASL II.	3
ASLP	210	ASL IV	3
ASLP	222	Deaf History and Culture	4
ASLP	226	Semantics and Communication in ASL I	3
		Natural sciences distribution	3

TOTAL CREDIT HOURS 60

* ENGL 101 if needed for ENGL 102/103 or general elective

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate an appreciation of the culture and cultural practices of the Deaf community and support for ASL as the visual language of the Deaf community.
- Effectively utilize signed communicative and interpreting skills learned in the classroom in general situations in and out of the Deaf community.
- Achieve an overall proficiency rating in all skill areas, both linguistic and pragmatic, of 2.5 on the MC Sign Language Proficiency Interview (MC-SLPI) in all skill areas.

American Sign Language Certificate (R): 220

The certificate program in American Sign Language is designed to provide students with a foundation in ASL and would benefit those pursuing business or other service-oriented fields where they might be called upon to communicate directly with Deaf clients. The program also serves students preparing to enter an Interpreter Training Program; students whose first language is ASL and who desire to learn the structure and syntax of the language; and students desiring to improve their understanding of Deaf culture to better communicate with Deaf family, friends, neighbors, and community.

ASLP	100	ASL I.	3
ASLP	105	Visual Gestural Communication	3
ASLP	106	Fingerspelling and Number Use in ASL.	3
ASLP	110	ASL II	3
ASLP	121	Introduction to the Deaf Community and Culture.	3
ASLP	200	ASL III	3
ASLP	205	Structural ASL I	3
ASLP	206	Structural ASL II.	3
ASLP	210	ASL IV	3

TOTAL CREDIT HOURS 27

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Integrate and recognize ASL registers.
- Demonstrate competency in ASL expressive and receptive skills at a minimum level 2 proficiency.
- Demonstrate competency in visual gestural communication and finger spelling.
- Demonstrate support and respect for ASL as the visual language of the Deaf community.
- Demonstrate overall competency of 2.0 in ASLPI (American Sign Language Proficiency Interview) assessment instruments.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

APPLIED GEOGRAPHY

Applied Geography AAS (R): 344

This curriculum is designed primarily for the student who desires to pursue a profession in geography, cartography, geographic education, or geographic information systems (GIS). The curriculum provides the student with an opportunity to test his or her interests prior to making a commitment for advanced study. Completion of all requirements will lead to the A.A.S.

Course work in this curriculum (involving fieldwork, use of computer technology, mapping projects, and research) will explore four related disciplines. Geography, the first discipline, is the study of places; it enables the graduate to function as a paraprofessional in a broad range of studies. The geography graduate assists in performing research and compiling data in activities connected with cultural and physical components of the environment, as well as city planning, marketing, transportation, and domestic and foreign area studies. Cartography, the second discipline, is the art and science of map construction; its skills enable the graduate to use, compile, and construct maps and related cartographic products. Geographic education, the third discipline, provides prospective teachers and currently employed teachers seeking to meet certification requirements in Montgomery County and Maryland with exposure to geographic concepts and methodology. GIS, the fourth discipline, combines the use of computer technology with the field of geography to help analyze and problem-solve spatial information.

FIRST SEMESTER

ENGL	101	Introduction to College Writing*	3
GEOG	101	Introduction to Geography	3
GEOG	240	Introduction to Cartography	3
HLTH	*100*	*Principles of Healthier Living (HLHF)*	1
		Mathematics foundation	3
		Speech foundation	3

SECOND SEMESTER

GEOG	113	Economic Geography	3
GEOG	130	Global Geography	3
		English foundation	3
		National sciences distribution with lab	4
		CMSC or MATH elective	3

THIRD SEMESTER

GEOG	105	Cultural Geography	3
GEOG	124	Physical Geography	4
GEOG	250	Interpretation of Geographic Imagery: Use and Analysis	3
		Cartography, GIS, or geography electives	3
		Arts or humanities distribution	3

FOURTH SEMESTER

GEOG	235	Preserving Our Natural Heritage: The Geography of Conservation and Natural Resources	3
		Behavioral and social sciences distribution	3
		Cartography, GIS, or geography electives†	6

TOTAL CREDIT HOURS 60

* ENGL 101 if needed for ENGL 102/103 or general elective.
† Select from GEOG 206, GEOG 211, GEOG 251, GEOG 255, and GEOG 260.

(Continued)

APPLIED GEOGRAPHY

Applied Geography AA (R): 344 *(continued)*

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Examine geography as a spatial concept and describe what it entails and how it is part of daily life.
- Identify where places are, including continents, countries, states, regions, cities, districts, islands, water bodies, physical features, and other defined locations.
- Interpret maps and atlases effectively and successfully use a variety of coordinate systems.
- Use maps and atlases as tools.
- Demonstrate geographic phenomena.
- Analyze, discuss, and compose key principles of geography through original research as well as formal and informal writing assignments

Cartography and Geographic Information Systems Certificate (R): 184

Training in cartography and geographic information systems enables the student to develop, construct, and use maps and other imagery to solve problems relating to the earth, its resources, and its development. These skills are used by professionals employed in federal mapping and related agencies in the Washington metropolitan region.

GEOG 101 Introduction to Geography. 3
GEOG 240 Introduction to Cartography 3
GEOG 250 Interpretation of Geographic Imagery: Use and Analysis 3
GEOG 251 Principles of Map Design 3
GEOG 255 Introduction to Computer Mapping . . .3
GEOG 260 Introduction to Geographic Information Systems 3
GEOG 270 Advanced Geographic Information Systems 3

TOTAL CREDIT HOURS 21

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Use various mapping software packages.
- Apply their enhanced cartographic skills.
- Use maps as tools.
- Conduct research and be familiar with the various research resources available, i.e., county, city, and federal government; the private sector; and online data.
- Have gained an appreciation of the various job opportunities available through attending trips to various cartographic facilities.
- Integrate other software as appropriate into their mapping projects, e.g., Adobe Illustrator, Photoshop, and other graphics packages.
- Use various techniques that improve their cartographic, GIS, and spatial analytic skills.
- Create portfolios and PowerPoint presentations and give presentations that strengthen their communication, interpersonal, and articulation skills.
- Present and explain their work at map design competitions and at poster presentations at conferences.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

APPLIED GEOGRAPHY

Geographic Education Certificate (R): 183

This certificate curriculum is designed primarily for the student who desires to pursue a profession in geographic education. Geographic education is a specialization in the field of geography. This facet of the curriculum is for students seeking to pursue a degree in teaching or to provide exposure to geographic concepts and methodology for teachers seeking to meet certification requirements in Montgomery County and Maryland. This curriculum provides students with an opportunity to test their interest prior to making a commitment for advanced study. Coursework in this curriculum will involve fieldwork, use of computer technology, mapping exercises, and extensive reading.

GEOG	101	Introduction to Geography	3
GEOG	105	Cultural Geography	3
GEOG	124	Physical Geography	4
GEOG	130	Global Geography	3
GEOG	235	Preserving Our National Heritage: The Geography of Conservation and Natural Resources	3
		Elective*	3

TOTAL CREDIT HOURS 19

* Select GEOG 113, GEOG 211, GEOG 222, or GEOG 250.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Use various geographic concepts and methodologies that will condition them for advanced degrees in geography.
- Read, interpret, and analyze maps.
- Conduct research and present.
- Teach geography in the K–12 curriculum more effectively.
- Use basic geographic information systems (GIS) software designed for grades K–12.

ARCHITECTURAL TECHNOLOGY

There are two tracks leading to the AAS in architectural and construction technology: architectural technology and management of construction. In addition, two certificates are offered: CAD for the building professional and management of construction. Both of the AAS tracks are designed to prepare graduates for entry into paraprofessional positions in the construction industry and architecture upon completion of the curriculum. (See Construction Management)

Architectural Technology (R): (302)

Architectural/Construction Technology AAS

Graduates of this AS track continue their education toward professional degrees or seek employment immediately as paraprofessionals. Technicians specializing in architecture and construction are prepared to assist and work with architects, contractors, and related professionals.

Successful graduates involve themselves in many specialized aspects of the construction industry, including preparation of contract drawings, supervision and/or inspection of construction work, and contract administration. Computer drafting skills provide extensive opportunities for graduates.

Students planning to transfer to four-year schools of architecture should be aware that not all courses in the curriculum may transfer.

A suggested course sequence follows. All students should consult with the architectural technology program coordinator prior to registration.

FIRST SEMESTER

ARCH	101	Introduction to Architecture and the Built Environment 3
ARCH	103	Building Technology and Documentation 3
CMGT	100	Construction Methods and Materials . .3
ENGL	101	Introduction to College Writing 3
MATH	*150*	*Elementary Applied Calculus I (MATF)* . . .4

SECOND SEMESTER

ARCH	104	Introduction to Architectural Graphics 3
ARCH	183	CAD: Architectural Applications. 3
ENGL	*102*	*Critical Reading, Writing, and Research (ENGF)* 3
ENGL	*103*	*Critical Reading, Writing, and Research (ENGF)* 3
		Arts or humanities distribution 3
		Behavioral and social sciences distribution 3

THIRD SEMESTER

ARCH	200	CAD: 3D Presentation 3
ARCH	201	Introduction to Architectural Design . .4
ARTT	*265*	*Architectural History: Ancient to 1400* 3
CMGT	290	Professional Practicum 1
PHYS	*203*	*General Physics I and II (NSLD)* 4

FOURTH SEMESTER

ARCH	202	CAD: REVIT I 3
ARTT	266	Architectural History: 1400 to Present 3
COMM	*108*	*Introduction to Human Communication (SPCF)* 3
HLTH	*100*	*Principles of Healthier Living (HLHF)* . . .1
		Elective* 4

TOTAL CREDIT HOURS 60

* Choice of Professional electives: ARTT 100, ARTT 102, ARCH 203, ARCH 204, ENGL 101.

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(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ARCHITECTURAL TECHNOLOGY

Architectural Technology (R) (302) *(continued)*

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Synthesize social, economic, environmental, material and aesthetic issues to create architectural designs.
- Document design strategies using a variety of graphic verbal and written forms.
- Analyze various construction technology and materials and demonstrate mastery in application in graphic format.
- Demonstrate an understanding of building design by means of resolving architectural space planning, aesthetic, and construction details issues in design projects such as residential, commercial, or public structures.

CAD for the Building Professional Certificate (R): 203

This certificate curriculum prepares students for entry-level positions in architectural firms or construction-related businesses by providing an opportunity to learn computer-aided drafting (CAD) skills, while developing a preliminary understanding of building technology. This curriculum also serves professionals currently in the architectural field who are seeking career advancement through the development of intensive technical and creative CAD skills and experience. These courses can be applied to the architectural technology AAS track.

GENERAL EDUCATION REQUIREMENTS

Foundation Courses

English foundation 3
Mathematics foundation 3

PROGRAM REQUIREMENTS

CMTG 100 Construction Methods and Materials . .3
ARCH 103 Building Technology and Documentation 3
ARCH 183 CAD: Architectural Applications. 4
ARCH 200 CAD: 3D Presentation 4
ARCH 202 CAD: REVIT I 4
ARCH 204 CAD: REVIT II 4
ENGL 101 Introduction to College Writing 3

TOTAL CREDIT HOURS 31

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Prepare construction documents in a variety of formats including hand drafting, 2D CAD [computer-aided drafting], 3D presentation and rendering, and 3D object based modeling.
- Demonstrate a thorough understanding of construction details and building sections.
- Differentiate between BIM software and non-object CAD software.
- Describe construction details in BIM documents.
- Prepare BIM construction documents based on designs submitted by employers or clients.
- Revise BIM construction documents.
- Arrange construction information in a BIM format.

ARCHITECTURAL TECHNOLOGY

Sustainability Letter of Recognition (R): 820

This program is designed for students who wish to develop skills or knowledge in sustainable design and implementation in the environment. People in government, business, construction, and environmental organizations would benefit from this letter. Students will gain an understanding of the implementations and requirements concerning the built environment. A grade of C or better is required for each course.

PROGRAM REQUIREMENTS

ARCH 203 Principles of Sustainability 3

ELECTIVES (SELECT 1 COURSE)

BIOL 105 Environmental Biology 3
ECON 105 Basic Economics 3
ECON 201 Principles of Economics I 3
LNTP 162 Landscape Design 3
Other ARCH elective 3

TOTAL CREDIT HOURS 6

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Assess the complexity of the design, construction, and management of buildings.
- Tabulate the theories of sustainability in terms of the site, water management, material and natural resources, alternate energies, and indoor air quality.
- Demonstrate an ability to work effectively as a member of a team.
- Evaluate the importance of the environmental impact of buildings.
- Demonstrate skills necessary in the sustainable sector of the construction industry.
- Apply practical analysis skills.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ART

The art curricula include two tracks leading to the AA in arts and sciences (art and art history), and two tracks leading to the AFA (graphic design and studio art).

Art: 003
Arts and Sciences AA

The basic art curriculum is designed to provide a foundation of general art courses supplemented by general education requirements. The core of skills provided by this foundation encourages a broad exposure to the arts and prepares students for advanced study and careers in many areas, including studio art, art education, applied design, museum studies, and art marketing.

The following curriculum offers basic art courses that will prepare the student for transfer, leading to a degree of bachelor of arts or bachelor of fine arts from a four-year college or university. Completion of all requirements for this track will lead to the award of the AA in arts and sciences. In keeping with the College's commitment to serve the varied educational needs of the community, the art program accommodates students who seek careers in the arts, as well as those who want to strengthen established skills or find a means of self-expression.

Suggested course sequences for students planning to pursue advanced study in art or art education, follow. All students should consult an adviser.

FIRST SEMESTER

ARTT	*100*	*Introduction to Drawing*	.3
ARTT	102	Design Studio: 2-Dimensional	.3
ARTT	116	Digital Tools for the Visual Arts	.4
ARTT	200	Art History: Ancient to 1400	.3
ENGL	101	Introduction to College Writing*	.3

SECOND SEMESTER

ARTT	103	Design Studio: 3-Dimensional	.3
ARTT	201	Art History: 1400 to Present	.3
ARTT	204	Intermediate Drawing	
		or	
ARTT	205	Figure Drawing I	.3
ENGL	*102*	*Critical Reading, Writing, and Research (ENGF)*	.3
		Health foundation	.1
		Mathematics foundation	3-4

THIRD SEMESTER

Art elective†	.3
Art elective†	.3
ENGL or ARTT elective‡	.3
*Behavioral and social sciences distribution***	.3
Natural sciences distribution with lab	.4

FOURTH SEMESTER

*Behavioral and social sciences distribution***	.3
Humanities distribution††	.3
Speech foundation	.3
Natural sciences distribution	3-4
Art elective†	.3

TOTAL CREDIT HOURS 63–65

* ENGL 101, if needed, for ENGL 102/103 or art elective.

† Students interested in pursuing advanced study in art should choose 9 credits of ARTT electives. Students interested in pursuing advanced study in art education should choose 9 credits from ARTT 211, ARTT 120, and one course from ARTT 225, ARTT 226, ARTT 227, ARTT 228, ARTT 230, or ARTT 233.

‡ Students interested in pursuing advanced study in art should choose one 200 level literature or writing course from ENGL 201, ENGL 202, ENGL 205, ENGL 208, ENGL 209, ENGL 220, ENGL 212, ENGL 213, ENGL 217, ENGL 223, ENGL 226, ENGL 227, ENGL 230, ENGL 233, ENGL 236, ENGL 239, ENGL 242, ENGL 245, ENGL 248, ENGL 264, ENGL 272. Students interested in pursuing advanced study in art education should replace the 200 level ENGL literature or writing course requirement with ARTT 123 or ARTT 221.

** The two behavioral and social sciences courses must be in different disciplines.

†† A world languages course is strongly recommended.

(Continued)

ART

Art: 003 *(continued)*

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate visual problem solving capability.
- Utilize Foundational skills and demonstrate competency in a range of art media and techniques.
- Demonstrate comprehension of art with a historical and contemporary context.

Art History: 059

Arts and Sciences AA

This track is designed for the student who is interested primarily in the historical and aesthetic aspects of the subject, rather than in the production of art, and who plans to transfer to a four-year program to pursue a degree in museum work, art research, or art history. Completion of all requirements for this track will lead to the award of the AA in arts and sciences.

A suggested course sequence for full-time students follows; part-time students should consult an adviser.

FIRST SEMESTER

ARTT	*100*	*Introduction to Drawing*	3
ARTT	102	Design Studio: 2-Dimensional	3
ARTT	200	Art History Survey: Ancient to 1400	3
ENGL	101	Introduction to College Writing*	3
		World language elective†	3

SECOND SEMESTER

ARTT	201	Art History: 1400 to Present	3
ENGL	*102*	*Critical Reading, Writing, and Research (ENGF)*	3
		Health foundation	1
		Mathematics foundation	3-4
		Speech foundation	3
		World language elective†	3

THIRD SEMESTER

ENGL	122	Introduction to World Mythology	
		or	
		Art history elective	3
		Behavioral and social sciences distribution‡	3
		Natural sciences distribution	3-4
		Art history elective	3
		World language elective†	3

FOURTH SEMESTER

	Behavioral and social sciences distribution‡	3
	Natural sciences distribution with lab	4
	Art history elective	3
	*Literature elective (HUMD)***	3
	World language elective†	3

TOTAL CREDIT HOURS 62–64

* ENGL 101, if needed, for ENGL 102/103 or general elective.
† French or German is recommended.
‡ Must be taken from different disciplines. One multicultural course is required from art, humanities, or behavioral and social sciences distribution.
** Course should be selected from humanities distribution list.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate the ability to think critically about, analyze and interpret works of art and architecture employing discipline specific vocabulary.
- Employ chronology in the understanding of historical and cultural contexts.
- Discriminate and differentiate works of art and architecture to demonstrate visual literacy.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ART

Studio Art: 910*

AFA Satewide Program (Visual Arts)

This Collegewide track is studio intensive with two-thirds of the total credit hours in studio art courses, and one-third of the total credit hours in General Education courses. The program will prepare students for transfer to a four-year art institution to pursue a bachelor of fine arts degree.

All students should meet with their advisor to plan their program of study as well as their transfer and career goals.

Footnote: The Maryland Higher Education Commission designates some community college programs as statewide programs. A student may enroll in any of these programs at the same rates as in-county residents if his or her particular program is not offered by the local community college or if the student cannot enroll due to an enrollment limit. For more information on statewide programs, please see college catalog.

FIRST SEMESTER

ARTT	*100*	*Introduction to Drawing*	.3
ARTT	102	Design Studio: 2-Dimensional	.3
ARTT	116	Digital Tools for the Visual Arts	.4
ARTT	200	Art History: Ancient to 1400	.3
ENGL	101	Introduction to College Writing*	.3

SECOND SEMESTER

ARTT	103	Design Studio: 3-Dimensional	.3
ARTT	201	Art History: 1400 to Present	.3
ARTT	204	Intermediate Drawing	
		or	
ARTT	205	Figure Drawing I	.3
ENGL	*102*	*Critical Reading, Writing, and Research (ENGF)*	.3
		Mathematics foundation	3-4

THIRD SEMESTER

ARTT	152	Photographic Expression I	
		or	
		Printmaking elective†	.3
ARTT	211	Painting I	.3
ARTT	221	Sculpture I	.3
ARTT	263	Professional Practice for the Visual Artist	.1
		Humanities distribution	.3
		Craft elective‡	.3

FOURTH SEMESTER

	Behavioral and social sciences distribution	.3
	Natural sciences distribution	3-4
	Art elective**	.3
	Art elective**	.3
	Art elective**	3-4

TOTAL CREDIT HOURS 62–65

* ENGL 101, if needed, for ENGL 102/103 or art elective.
† Select ARTT 152, ARTT 225, ARTT 226, ARTT 227, ARTT 228, ARTT 230, or ARTT 233.
‡ Select ARTT 120, ARTT 123, ARTT 245, or ARTT 247.
** To meet the 9 elective credits, select a minimum of 6 credits from an ARTT studio or art history course, and a maximum of 4 credits from GDES 120, GDES 134, GDES 136, GDES 210, or GDES 220.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate visual problem solving capability.
- Utilize foundational skills and demonstrate competency in a range of art media and techniques.
- Demonstrate comprehension of art with a historical and contemporary context.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

AUTOMOTIVE TECHNOLOGY

Automotive Technology AAS (R): 307

The ASE-NATEF Master Certified curriculum prepares students for employment in the automotive service industry as a repair technician. The curriculum also prepares students for seven ASE automobile technician certification exams: ASE A-1, A-4, A-5, A-6, A-8, and L-1. Students are exposed to the following areas of expertise: undercar (brakes, suspension, steering, and alignment), electrical (engine and chassis/body), engineer performance (computer controlled fuel injection, ignition, and emission control systems,) engine repair and HVAC (heating, ventilation, and air conditioning). All automotive (AUTO) classes consist of a lecture section and a lab (shop) section. Some AUTO classes also include a lab discussion section. Successful completion of this program, AUTO 130 and AUTO 220, leads to the award of an AAS degree and the powertrain specialist certificate. Successful complete of this program AUTO 130 and AUTO 220 also prepares students for all ASE automobile technician certification exams. This combination is designed for individuals seeking ASE a master automobile technician status.

FIRST SEMESTER

AUTO	101	Introduction to Automotive Technology 3
AUTO	140	Suspension and Steering. 5
AUTO	161	Automotive Electricity I 4
ENGL	101	Introduction to College Writing* 3

SECOND SEMESTER

AUTO	150	Brakes. 5
AUTO	262	Battery/Starting/Charging. 3
AUTO	263	Chassis Circuits 4
		English foundation 3
		Mathematics foundation 3

THIRD SEMESTER

AUTO	200	Auto Tech Practicum 1
AUTO	270	Automotive HVAC. 4

FOURTH SEMESTER

AUTO	111	Engine Repair 4
AUTO	180	Basic Engine Performance. 4
CHEM	109/109L	*Chemistry and Society/Chemistry and Society Laboratory*
		or
		Natural sciences distribution with lab . . .4
COMM	112	Business and Professional Speech Communication
		or
		Speech foundation 3

FIFTH SEMESTER

AUTO	282	Engine Performance II. 4
AUTO	283	Engine Performance III 4
		Arts or humanities distribution 3
		Behavioral and social sciences distribution 3
		Health foundation 1

TOTAL CREDIT HOURS 68

* ENGL 101 if needed for ENGL 102/103 or general elective.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify and describe operation of automotive components and systems.
- Demonstrate safe and effective use of tools and equipment related to the automotive service and repair industry.
- Diagnose, service, and repair automotive systems and components.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

AUTOMOTIVE TECHNOLOGY

Automotive Electrical Systems Specialist Certificate (R): 162

This certificate curriculum prepares individuals for employment in the automotive service industry as an electrical systems technician. The curriculum also prepares individuals for the ASE A-6 (Electrical/Electronic Systems) automobile technician certification exam. Credits may be applied to the automotive technology.

FIRST SEMESTER

AUTO 101 Introduction to Automotive Technology .3
AUTO 161 Automotive Electricity I 4

SECOND SEMESTER

AUTO 262 Battery/Starting/Charging. 3
AUTO 263 Chassis Circuits 4

TOTAL CREDIT HOURS 14

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Obtain gainful employment in the automotive service and repair (or related) industry.
- Complete successfully the following National Institute for Automotive Service Excellence (ASE) automobile technician certification exam: A-6 (Electrical/Electronic Systems).

This program is not eligible for federal and state financial aid.

Engine Performance Specialist Certificate (R): 160A

This certificate curriculum prepares individuals for employment in the automotive service industry as an engine performance and repair technician. The curriculum also prepares individuals for ASE A-1 (Engine Repair), A-8 (Engine Performance), and L-1 (Advanced Engine Performance) automobile technician certification exams. Credits may be applied to the automotive technology AAS.

FIRST SEMESTER

AUTO 101 Introduction to Automotive Technology .3
AUTO 161 Automotive Electricity I 4
AUTO 180 Basic Engine Performance. 4

SECOND SEMESTER

AUTO 111 Engine Repair 4
AUTO 282 Engine Performance II. 4
AUTO 283 Engine Performance III 4

TOTAL CREDIT HOURS 23

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Obtain gainful employment in the automotive service and repair (or a related) industry.
- Complete successfully the following National Institute for Automotive Service Excellence (ASE) automobile technician certification exams: A-1 (Engine Repair), A-8 (Engine Performance), and L-1 (Advanced Engine Performance Specialist).

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

AUTOMOTIVE TECHNOLOGY

Powertrain Specialist Certificate (R): 161A

This certificate curriculum prepares individuals for employment in the automotive service industry as an engine, automatic trans/transaxle, manual trans/transaxle, and driveline repair technician. The curriculum also prepares individuals for ASE A-1 (Engine Repair), A-2 (Automatic Transmission/Transaxle), and A-3 (Manual Drive Train and Axles) automobile technician certification exams. Credits may be applied to the automotive technology AAS.

FIRST SEMESTER

AUTO 101 Introduction to Automotive Technology .3
AUTO 161 Automotive Electricity I 4
AUTO 180 Basic Engine Performance. 4

SECOND SEMESTER

AUTO 111 Engine Repair 4
AUTO 130 Manual Drive Train and Axles 5
AUTO 220 Automotive Transmissions/Transaxles .5

TOTAL CREDIT HOURS 25

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Obtain gainful employment in the automotive service and repair (or related) industry.
- Complete successfully the following National Institute for Automotive Service Excellence (ASE) automobile technician certification exams: A-1 (Engine Repair), A-2 (Automatic Transmission/Transaxle), and A-3 (Manual Drive Train and Axles).

Undercar Specialist Certificate (R): 163A

This certificate curriculum prepares individuals for employment in the automotive service industry as a brake, suspension, steering, and alignment technician. The curriculum also prepares individuals for ASE A-4 (Suspension and Steering) and A-5 (Brakes) automobile technician certification exams. Credits may be applied to the automotive technology AAS.

AUTO 101 Introduction to Automotive Technology .3
AUTO 140 Suspension and Steering. 5
AUTO 150 Brakes. 5
AUTO 161 Automotive Electricity I 4

TOTAL CREDIT HOURS 17

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Obtain gainful employment in the automotive service and repair (or related) industry.
- Complete successfully the following National Institute for Automotive Service Excellence (ASE) automobile technician certification exams: A-4 (Suspension and Steering) and A-5 (Brakes).

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

BIOTECHNOLOGY

The biotechnology program is designed to instruct and train students in the field of biotechnology. Entry-level workers in the field of biotechnology are involved in laboratory work such as DNA isolation or sequencing, cell culture, toxicology or vaccine sterility testing, antibody production and isolation, and the testing and development of diagnostic and therapeutic agents. Training is designed to prepare students for both academic achievement and successful employment in the biotechnology industry. The program offers both a degree and two certificates to meet students' different needs.

Biotechnology AAS (G): 334

On completion of the biotechnology AAS, the student may transfer to another institution and earn a bachelor's degree in a biological science or may elect to enter the workforce. Course selection within the curriculum depends on which option the student selects.

The emphasis of the program is on applied laboratory skills relevant to the biotechnology industry. A solid foundation is obtained through introductory coursework in biotechnology, biology, chemistry, and mathematics. These background courses prepare students for more rigorous upper-level applied coursework in biotechnology, biology, and chemistry taken during the second year. High school biology, chemistry, and math (algebra II) are strongly recommended.

Because of the variation in requirements of four-year institutions, students are urged to consult an adviser about specific course selections.

FIRST SEMESTER

BIOL	*150*	*Principles of Biology I (NSLD)*	.4
BIOT	110	Introduction to Biotechnology	.2
CHEM	131	Principles of Chemistry I	.4
ENGL	101	Introduction to College Writing*	.3
		Mathematics foundation	.3

SECOND SEMESTER

BIOT	120	Cell Culture and Cell Function	.3
BIOT	200	Protein Biotechnology	.4
BIOL	210	Microbiology	.4
		English foundation	.3
		Health foundation	.1

THIRD SEMESTER

BIOL	220	General Genetics	
		or	
BIOL	222	Principles of Genetics	.4
BIOT	230	Basic Immunology and Immunological Methods	.4
CHEM	150	Essentials of Organic and Biochemistry	
		or	
CHEM	203	Organic Chemistry I	4-5
		Speech foundation	.3

FOURTH SEMESTER

BIOT	240	Nucleic Acid Methods	.4
		Arts or humanities distribution	.3
		Behavioral and social sciences distribution	.3
		Electives	.4

TOTAL CREDIT HOURS 61–62

* ENGL 101 if needed for ENGL 102/103 or general elective.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Independently complete basic laboratory tasks common to biotechnology such as documentation, pipetting, buffer preparation, dilutions, and gel electrophoresis.
- Define and explain the basic principles, concepts, and techniques of biotechnology.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

BIOTECHNOLOGY

Biotechnology Certificate (G): 219

This certificate curriculum is intended to prepare people for immediate employment in the biotechnology field. This curriculum is suitable for students currently working in the biotechnology or medical technology field who want to upgrade or update their skills, or for those who have obtained a bachelor's degree in the life sciences and want additional training. Students must obtain consent of the biotechnology program coordinator before enrolling in the certificate curriculum. To enter directly into the certificate curriculum, students must have met the prerequisites for the biotechnology courses (see Course Descriptions section in this catalog).

BIOT	110	Introduction to Biotechnology	2	BIOT	230	Basic Immunology and Immunological Methods	4
BIOT	120	Cell Culture and Cell Function	3	BIOT	240	Nucleic Acid Methods	4
BIOT	200	Protein Biotechnology	4				

TOTAL CREDIT HOURS 17

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Independently complete basic laboratory tasks common to biotechnology such as documentation, pipetting, buffer preparation, dilutions, and gel electrophoresis.
- Define and explain the basic principles, concepts, and techniques of biotechnology.

Biomanufacturing Certificate (G): 246

This certificate curriculum is designed to prepare students for immediate employment in biomanufacturing. This certificate is suitable for students who have completed high school and desire fast entry into the biotechnology industry, for people who want to update or upgrade their skills, or for those who have obtained a bachelor's degree in the life sciences and want additional training. Students must obtain consent of the biotechnology program coordinator before enrolling in the certificate curriculum. To enter directly into the certificate curriculum, students must have met the prerequisites for the courses (see Course Descriptions section in this catalog).

BIOTECHNOLOGY REQUIREMENTS

BIOL	150	Principles of Biology I	4
BIOT	120	Cell Culture and Cell Function	3
BIOT	200	Protein Biotechnology	4
BIOT	250	Principles of Biomanufacturing	4
CHEM	131	Principles of Chemistry I	4

ELECTIVES (SELECT ONE BI AND ONE CH COURSE)

BIOL	210	Microbiology	4
BIOL	220	General Genetics	4
CHEM	132	Principles of Chemistry II	4
CHEM	150	Essentials of Organic and Biochemistry	4
CHEM	203	Organic Chemistry I	5

TOTAL CREDIT HOURS 27–28

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Complete, independently and working in teams, basic laboratory tasks common to biomanufacturing such as documentation, pipetting, buffer preparation, dilutions, and gel electrophoresis.
- Define and explain the basic principles, concepts, and techniques of biomanufacturing.
- Be technically prepared for entry-level positions in the local biotechnology industry.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

BUILDING TRADES TECHNOLOGY

Building Trades Technology AAS (R)

This program is intended to prepare students for careers in the building and construction trades. The general education courses, in conjunction with specialized courses, provide a broad foundation and sharpen students' skills in preparation for entry into, or advancement in, today's workplace. This curriculum, following the carpentry track, provides training, skills, and knowledge that prepares students for employment as carpenters; or provides current building and construction professionals with essential carpentry skills. This curriculum, following the electrical wiring track, provides training, skills and knowledge that prepares students for employment as electricians; or provides current building and construction professionals with essential electrical wiring skills. This curriculum, following the HVAC track, provides training, skills, and knowledge that prepares students for employment as HVAC technicians; or provides current building and construction professionals with essential HVAC technician skills. HVAC track students, in order to receive the AAS, must pass the E.P.A. 608 Certification Exam and at least one Industry Competency Exam (ICE).

CARPENTRY TRACK: 308A

FIRST SEMESTER

BLDG	130	Introduction to Building Trades	3
BLDG	133	Building Trades Blueprint Reading	3
BLDG	140	Fundamentals of Carpentry	4
ENGL	101	Introduction to College Writing*	3
		Health foundation	1

SECOND SEMESTER

BLDG	230	Building Codes and Standards	3
BLDG	240	Advanced Framing and Exterior Finishing	4
		English foundation	3
		Mathematics foundation	3
		Professional electives†	3

THIRD SEMESTER

BLDG	242	Remodeling and Interior Finishing	4
		Speech foundation	3
		Arts or humanities distribution	3
		Professional electives†	6

FOURTH SEMESTER

BLDG	136	Construction Safety	2
		Behavioral and social sciences foundation	3
		Natural sciences distribution with lab	4
		Professional electives†	5

TOTAL CREDIT HOURS FOR CARPENTRY TRACK 60

* ENGL 101 if needed for ENGL 102/103 or general elective.

† Select from BSAD 101, BLDG 150, BLDG 160, BLDG 182, BLDG 184, BLDG 188, BLDG 200 (1-3 credits), BLDG 250, CMGT 100, CMGT 135, ARCH 103, ARCH 183, LNTP 204, SPAN 101.

ELECTRICAL WIRING TRACK 308B

FIRST SEMESTER

BLDG	130	Introduction to the Building Trades	3
BLDG	133	Building Trades Blueprint Reading	3
BLDG	150	Fundamentals of Electrical Wiring	4
ENGL	101	Introduction to College Writing*	3
		Health foundation	1

SECOND SEMESTER

		English foundation	3
		Mathematics foundation	3
BLDG	250	Residential Electrical Wiring	4
		Professional electives†	6

THIRD SEMESTER

BLDG	252	Commercial Electrical Wiring	4
BLDG	256	National Electrical Code	3
		Speech foundation	3
		Arts or humanities distribution	3
		Professional electives†	3

FOURTH SEMESTER

BLDG	136	Construction Safety	2
		Behavioral and social sciences distribution	3
		Natural sciences distribution with lab	4
		Professional electives†	5

TOTAL CREDIT HOURS FOR ELECTRICAL WIRING TRACK 60

* ENGL 101 if needed for ENGL 102/103, or general elective.

† Select from BSAD 101, BLDG 140, BLDG 160, BLDG 172, BLDG 182, BLDG 184, BLDG 186, BLDG 188, BLDG 200 (1-3 credits,) BLDG 230, BLDG 240, BLDG 242, BLDG 284, CMGT 100, CMGT 135, ARCH 103, ARCH 183, CMGT 280, SPAN 101. Professional electives must include at least one 200-level course.

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

BUILDING TRADES TECHNOLOGY

Building Trades Technology AAS (R) *(continued)*

HVAC WIRING TRACK 308C

FIRST SEMESTER

ENGL	101	Introduction to College Writing*	3
		Health foundation	1
BLDG	130	Introduction to the Building Trades	3
BLDG	133	Building Trades Blueprint Reading	3
BLDG	170	Fundamentals of Refrigeration	4

SECOND SEMESTER

BLDG	172	HVAC Electricity	4
BLDG	174	HVAC Technician Development	2
		English foundation	3
		Mathematics foundation	3
		Professional electives†	3
		EPA 608 Certification Exam	

THIRD SEMESTER

BLDG	271	Heating Systems	4
BLDG	273	Air Conditioning and Heat Pump Systems	4
		Arts or humanities distribution	3
		Speech foundation	3
		Professional electives†	3

FOURTH SEMESTER

BLDG	136	Construction Safety	2
BLDG	275	Residential HVAC System Design	2
		Behavioral and social sciences distribution	3
		Natural sciences distribution with lab	4
		Professional electives†	3
		Industry Competency Exam	

TOTAL CREDIT HOURS FOR HVAC TRACK 60

* ENGL 101 if needed for ENGL 102/103, or general elective.

† Select from BASD 101, BLDG 140, BLDG 150, BLDG 160, BLDG 182, BLDG 184, BLDG 186, BLDG 188, BLDG 200 (2-3 credits), BLDG 230, BLDG 250, BLDG 252, BLDG 256, CMGT 100, CMGT 135, CMGT 280, ARCH 103, ARCH 183, SPAN 101. Professional electives must include at least one 200-level course.

PROGRAM OUTCOMES FOR ALL TRACKS

Upon completion of this program a student will be able to:

- Define and explain the basic principles and techniques of residential construction.
- Apply relevant construction skills in a particular trade area.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

BUILDING TRADES TECHNOLOGY

Carpentry Certificate (R): 179A

This certificate curriculum prepares individuals for employment or advancement in the carpentry trade of the building and construction industry. A combination of academic and practical instruction will provide individuals with knowledge and skills that are necessary for success in this profession. Credits may also be applied to the building trades technology AAS degree.

BLDG 130 Introduction to the Building Trades . . .3
BLDG 133 Building Trades Blueprint Reading . . .3
BLDG 140 Fundamentals of Carpentry 4
BLDG 230 Building Codes and Standards 3
BLDG 240 Advanced Framing and Exterior Finishing. 4
BLDG 242 Remodeling and Interior Finishing. . . .4

TOTAL CREDIT HOURS 21

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate the ability to work effectively as a team member with various construction trades and personnel.
- Describe effectively the construction process as it applies to residential buildings.
- Apply practical carpentry skills.
- Communicate written, verbal, and visual information as it relates to carpentry.

Carpentry Letter of Recognition (R): 810A

This sequence of two courses is designed for persons who wish to develop skills in the carpentry trade. To complete each course in this sequence, students need to demonstrate skills in specific areas. These areas include: material selection, calculations, framing, stairs, roofing, and siding. A grade of C or better is required in each course.

BLDG 140 Fundamentals of Carpentry 4
BLDG 240 Advanced Framing and Exterior Finishing. 4

TOTAL CREDIT HOURS 8

Upon successful completion of this course of study, and application to the Admissions and Records Office, the letter of recognition in carpentry will be issued by the chief enrollment services and financial aid officer.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate the ability to work effectively as a team member within the carpentry trade.
- Describe effectively the roles and responsibilities of a carpenter on a residential construction project.
- Apply practical carpentry skills.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

BUILDING TRADES TECHNOLOGY

Electrical Wiring Certificate (R): 245

This certificate curriculum prepares individuals for employment or advancement in the electrical trade of the building and construction industry. A combination of academic and practical instruction will provide individuals with knowledge and skills that are necessary for success in the electrical profession.

Credits may also be applied to the Building Trades Technology AAS degree.

BLDG	130	Introduction to the Building Trades . . .3	BLDG	250	Residential Electrical Wiring 4
BLDG	133	Building Trades Blueprint Reading . . .3			Professional electives* 5-7
BLDG	150	Fundamentals of Electrical Wiring 4			**TOTAL CREDIT HOURS 19–21**

* Select from BLDG 184, BLDG 186, BLDG 252, BLDG 256, BLDG 284.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate the ability to work effectively as a team member with various construction trades and personnel.
- Describe effectively the construction process as it applies to residential buildings.
- Apply practical construction skills in electrical wiring.
- Communicate written, verbal, and visual information as it relates to electrical wiring.

Electrical Wiring Letter of Recognition (R): 807A

This sequence of two courses is designed for persons who wish to develop skills in the residential electrical trade. To complete each course in this sequence, students need to demonstrate skills in specific areas. These areas include: material and tool selection, calculations, switch and receptacle wiring, lighting, services and panels. A grade of C or better is required in each course.

BLDG	150	Fundamentals of Electrical Wiring 4	BLDG	250	Residential Electrical Wiring 4
					TOTAL CREDIT HOURS 8

Upon successful completion of this course of study and application to the Admissions and Records Office, the letter of recognition in electrical wiring will be issued by the chief enrollment services and financial aid officer.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate the ability to work effectively as a team member within the electrical trade.
- Describe effectively the roles and responsibilities of an electrician on a residential construction project.
- Apply practical electrical skills.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

BUILDING TRADES TECHNOLOGY

HVAC Certificate (R): 244

This certificate curriculum prepares individuals for employment or advancement in the HVAC trade of the building and construction industry. A combination of academic and practical instruction will provide individuals with knowledge and skills that are necessary for success in the HVAC profession. Credits may also be applied to the building trades technology AAS degree.

BLDG	130	Introduction to the Building Trades	3
BLDG	133	Building Trades Blueprint Reading	3
BLDG	170	Fundamentals of Refrigeration	4
BLDG	172	HVAC Electricity	4
BLDG	174	HVAC Technician Development	2
BLDG	271	Heating Systems	4
BLDG	273	Air Conditioning and Heat Pump Systems	4

TOTAL CREDIT HOURS 24

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate the ability to work effectively as a team member with various construction trades and personnel.
- Describe effectively the construction process as it applies to residential buildings.
- Apply practical construction skills in HVAC.
- Communicate written, verbal, and visual information as it relates to the HVAC trade.

HVAC Letter of Recognition (R): 808A

This sequence of three courses is designed for persons who wish to develop skills in the heating, ventilation, and air conditioning (HVAC) trade. To complete each course in this sequence, students need to demonstrate skills in specific areas. These areas include: refrigeration systems, soldering and brazing, electrical controls, and refrigerants. A grade of C or better is required in each course.

BLDG	170	Fundamentals of Refrigeration	4
BLDG	172	HVAC Electricity	4
BLDG	174	HVAC Technician Development	2

TOTAL CREDIT HOURS 10

Upon successful completion of this course of study and application to the Admissions and Records Office, the letter of recognition in HVAC will be issued by the chief enrollment services and financial aid officer.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate the ability to work effectively as a team member within the HVAC trade.
- Describe effectively the roles and responsibilities of a HVAC technician on a residential construction project.
- Apply practical HVAC skills.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

BUILDING TRADES TECHNOLOGY

Residential Remodeling and Repair Certificate (R): 236A

This certificate curriculum prepares individuals for employment in the remodeling and repair sector of the building and construction industry. A combination of academic and practical instruction will provide individuals with knowledge and skills that are necessary for success in this profession. Credits may also be applied to the building trades technology AAS degree.

BLDG 130 Introduction to the Building Trades . . .3
BLDG 133 Building Trades Blueprint Reading . . .3
BLDG 140 Fundamentals of Carpentry 4
BLDG 242 Remodeling and Interior Finishing 4
BLDG 150 Fundamentals of Electrical Wiring 4
BLDG 160 Fundamentals of Plumbing 4

TOTAL CREDIT HOURS 22

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate the ability to work effectively as a team member with various construction trades and personnel.
- Effectively describe the construction process as it applies to residential buildings.
- Apply practical construction skills in various trades areas.
- Communicate written, verbal, and visual information as it relates to the remodeling process.

Residential Remodeling Letter of Recognition (R): 818

This sequence of two courses is designed for persons who wish to develop skills in the residential remodeling trade. To complete each course in this sequence, students need to demonstrate skills in specific areas. These areas include: material and tool selection, calculations, basic framing, drywall, cabinetry, tile, painting, and trim installation. A grade of C or better is required in each course.

BLDG 140 Fundamentals of Carpentry 4
BLDG 242 Remodeling and Interior Finishing 4

TOTAL CREDIT HOURS 8

Upon successful completion of this course of study and application to the Admissions and Records Office, the letter of recognition in residential remodeling will be issued by the chief enrollment services and financial aid officer.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate the ability to work effectively as a team member within the remodeling trades.
- Describe effectively the roles and responsibilities of a remodeling specialist on a residential construction project.
- Apply practical remodeling skills.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

BUSINESS

Business AA: 006

This curriculum is designed for students planning to transfer to a four-year college and major in general business, or a more specialized field of business such as finance, accounting, international business, marketing, or management. It also provides a solid foundation for students planning to major in economics or pre-law. Completion of all requirements for this curriculum will lead to the award of the AA degree in business. Note: Many credits earned in the management certificate requirements may not be applied toward an AA in business. Students should seek advice from a counselor.

Business students may be eligible for the Macklin Business Institute scholars program, a competitive honors program which includes seminars, special honors courses, mentoring, the possibility of an internship, and a scholarship. Students potentially interested in this program should take ECON 201, ECON 202, or ACCT 222 in the sophomore year. For more information on this program see this catalog, the Montgomery College website, or a counselor.

FIRST SEMESTER

BSAD	101	Introduction to Business 3
CMAP	120	Introduction to Computer Applications
		or
CMSC	110	Computer Concepts† 3
		Behavioral and social sciences distribution‡ 3
		*Mathematics foundation** 3-4
		Elective** 3

SECOND SEMESTER

BSAD	210	Statistics for Business and Economics
		or
MATH	117	Elements of Statistics 3
		Arts distribution 3
		English foundation 3
		Natural sciences distribution with lab 4
		Speech foundation 3

THIRD SEMESTER

ACCT	221	Accounting I 4
ECON	201	Principles of Economics I 3
MGMT	201	Business law
		or
		Elective†† 3
		Health foundation 1-3
		Humanities distribution 3

FOURTH SEMESTER

ACCT	222	Accounting II 4
ECON	202	Principles of Economics II 3
		Arts or humanities distribution 3
		Natural sciences distribution 3
		Elective‡‡ 2

TOTAL CREDIT HOURS 60–62

* Students should consult an adviser regarding the requirements of transfer institutions.
† CMAP 120 for UMCP, CMSC 110 for UMUC, or check with other transfer schools.
‡ Select a course with a BSSD designator other than ECON.
** ENGL 101 will satisfy this elective or if necessary, use as needed to fulfill the 60 credit requirement.
†† Students should consult an adviser regarding the requirements of transfer institutions. For some institutions, MGMT 201 may be appropriate, for others (e.g. The Smith School at the University Maryland) another course will.
‡‡ If necessary use as needed to fill the 60 credit requirement.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Interpret and evaluate financial information to assist business decision making.
- Apply economic principles to business decision making.
- Apply basic ethical principles to businesses practices.
- Use appropriate analytical and statistical tools and technology to support business practices.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

COMMUNICATION & BROADCASTING TECHNOLOGY

The communication and broadcasting technology curricula provide training for careers in radio production, television production, and related fields in digital media, such as "e-radio" production and digital video editing. Courses are designed to benefit those seeking new careers and the upgrading of current skills, as well as recent high school graduates exploring career opportunities in the electronic media.

There are two programs leading to the AAS in communication and broadcasting technology. Students in either the radio or the television AAS track study broad industry-wide topics, including an introduction to broadcasting, audio production techniques, broadcast journalism, broadcast management, and basic television production. Having acquired this core knowledge, degree-seeking students move on to advanced hands-on, experience-based classes in either radio or television production. This advanced study helps students develop technical skill, aesthetic values, and professional attitudes that will be of value in commercial, industrial, and educational media production and distribution. A transferable general education component rounds out the two AAS programs.

Students interested in concentrated career preparation without the general education component may choose certificate curricula in broadcast journalism, digital multimedia production (which provides technical skills training in digital videography and video editing and digital audio production), radio production, or television production.

For more information on communication and broadcasting technology curricula, please contact the Department of Communication Arts Technologies.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

COMMUNICATION & BROADCASTING TECHNOLOGY

Broadcast Journalism Certificate (R): 207

This certificate curriculum provides an intensive course of study focused on providing proficiency in broadcast journalism skills, techniques, and procedures. This concentrated approach can assist those persons seeking first-time employment with a television news organization, those planning to change careers to a news-based field, or those currently working in television production other than news who wish to upgrade or expand their skills.

ENGL	101	Introduction to College Writing	3
TVRA	101	Video Editing for Broadcast	4
TVRA	105	Introduction to Broadcasting	3
TVRA	120	Television Production	4
TVRA	125	Audio Production Techniques	4
TVRA	129	Writing for Television and Radio	3
TVRA	224	Electronic Field Production	3
TVRA	227	Broadcast Journalism	3
TVRA	230	Advanced Television Production	4
TVRA	255	Advanced Broadcast Journalism	3

TOTAL CREDIT HOURS 34

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate problem-solving skills that incorporate both the technical and creative aspects of the process of creating compelling and accurate video/audio content for use in a TV news environment.
- Demonstrate the ability, verbally and in writing, to think critically and to demonstrate an understanding of broadcast-style writing and radio and TV news production processes.
- Understand and employ the technical procedures involved in creating digital video and audio media in a server-based, collaborative environment.
- Demonstrate technical proficiency with professional-quality computer software used in digital editing.
- Understand and employ contemporary design elements to create visually stimulating and aesthetically balanced graphics and video.
- Demonstrate proficiency with audio procedures to create audio and video segments and final projects with balanced sound that falls within acceptable levels.
- Demonstrate planning and preparation skills for efficient execution of technical procedures in a deadline-oriented environment.
- Develop constructive, organized work habits, including paperwork and computer file management.
- Demonstrate safe practices in the use of technical video and audio equipment and computer hardware and software.
- Develop a writing portfolio and a video/audio portfolio demonstrating journalism skills and technical proficiency for prospective employment.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

COMMUNICATION & BROADCASTING TECHNOLOGY

Digital Multimedia Production Certificate (R): 214

This certificate curriculum focuses on creating original digital video, animation, and audio source materials and editing these original files and existing resource materials into digital media presentations suitable for educational, commercial, or corporate use. This certificate is intended to assist those seeking first-time employment or planning to change careers, and those currently working who wish to upgrade or expand their skills. The curriculum is intended for individuals who plan to work as employees or as self-employed entrepreneurs.

TVRA	101	Video Editing for Broadcast	4
TVRA	120	Television Production	4
TVRA	125	Audio Production Techniques	4
TVRA	224	Electronic Field Production	
		or	
GDES	140	Introduction to Animation	3
TVRA	250	Advanced Digital Media Production	4

TOTAL CREDIT HOURS 19

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate problem-solving skills that incorporate both the technical and creative aspects of the process of DVD creation for a mass market, based on client specifications and the target audience.
- Understand and employ the technical procedures involved in creating digital video and audio media in a server-based, collaborative environment.
- Demonstrate the ability, verbally and in writing, to think critically and to demonstrate an understanding of target audience and production processes.
- Demonstrate technical proficiency with computer software used in digital editing, DVD creation, and incorporating links to Internet sources to complete projects.
- Understand and employ contemporary design elements to create visually stimulating and aesthetically balanced graphics and video.
- Demonstrate proficiency with audio procedures to create video segments and final DVD projects with balanced sound that falls within acceptable levels.
- Demonstrate planning and preparation skills for efficient execution of technical procedures, adhering to client-specified deadlines.
- Develop constructive, organized work habits, including paperwork and computer file management.
- Demonstrate safe practices in the use of technical video and audio equipment and computer hardware and software.
- Develop a portfolio of multimedia projects representing creativity and technical proficiency for professional use.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

COMMUNICATION & BROADCASTING TECHNOLOGY

Radio (R): 309

Communication and Broadcasting Technology AAS

This AAS track is designed primarily to educate the student interested in seeking a career in radio broadcasting. Through hands on projects, emphasis is placed on the study of skills associated with performance, production, technical operation, and management in the field of radio communications.

FIRST SEMESTER

ENGL	101	Introduction to College Writing*	3
MUSC	*110*	*Listening to Music*	3
TVRA	105	Introduction to Broadcasting	3
TVRA	125	Audio Production Techniques	4
		Speech foundation	3

SECOND SEMESTER

TVRA	129	Writing for Television and Radio	3
TVRA	215	Computers in Radio	3
TVRA	220	Radio Production	4
		English foundation	3
		Mathematics foundation	3

THIRD SEMESTER

TVRA	134	Media Appreciation	3
TVRA	227	Broadcast Journalism	3
TVRA	260	Radio Station Operation	3
		Behavioral and social sciences distribution	3
		Natural sciences distribution with lab	4

FOURTH SEMESTER

COMM	109	Voice and Diction	3
MUSC	125	History of Jazz	3
TVRA	239	Broadcast Management and Engineering	3
TVRA	255	Advanced Broadcast Journalism	3
		Health foundation	1-3

TOTAL CREDIT HOURS 61–63

* ENGL 101 if needed for ENGL 102/103 or general elective.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate problem solving skills that incorporate both the technical and creative aspects of the process of creating audio content for use in broadcast radio or audio production.
- Demonstrate the ability, verbally and in writing, to think critically and to incorporate general education course material into understanding of radio formats for specific target audiences and of audio production processes.
- Demonstrate technical proficiency with professional quality computer software used in audio editing and digital audio content creation.
- Demonstrate planning and preparation skills for efficient execution of technical procedures in a deadline-oriented environment.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

COMMUNICATION & BROADCASTING TECHNOLOGY

Radio Production Certificate (R): 208

This certificate curriculum provides an intensive course of study focused on providing proficiency in radio production skills. This concentrated approach can assist those persons seeking first-time employment in the radio production industry, those planning to change careers into radio, or those currently working in radio who wish to upgrade or expand their skills.

ENGL	101	Introduction to College Writing	3
TVRA	105	Introduction to Broadcasting	3
TVRA	125	Audio Production Techniques	4
TVRA	215	Computers in Radio	3
TVRA	220	Radio Production	4
TVRA	239	Broadcasting Management and Engineering	3
TVRA	260	Radio Station Operation	3

TOTAL CREDIT HOURS 23

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate problem-solving skills that incorporate both the technical and creative aspects of the process of creating audio content for use in broadcast radio or audio production.
- Demonstrate the ability, verbally and in writing, to think critically and to demonstrate an understanding of radio formats for specific target audiences and of audio production processes.
- Understand and employ the technical procedures involved in creating digital audio media in a server-based, collaborative environment.
- Demonstrate technical proficiency with professional-quality computer software used in audio editing and digital audio content creation.
- Demonstrate proficiency with audio procedures to create final projects with balanced sound that falls within acceptable levels.
- Demonstrate planning and preparation skills for efficient execution of technical procedures.
- Develop constructive, organized work habits, including paperwork and computer file management.
- Demonstrate safe practices in the use of technical audio production equipment and computer hardware and software.
- Develop a portfolio of audio projects demonstrating creativity and technical proficiency for prospective employment.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

COMMUNICATION & BROADCASTING TECHNOLOGY

Television (R): 310

Communication and Broadcasting Technology AAS

This AAS track is designed primarily to prepare the student interested in gaining knowledge and skills needed to pursue a career in television, specifically television production, engineering, and management. Through an unusually extensive amount of practical experience, the track will prepare the student to enter the job market with the appropriate education for industrial, commercial, governmental, and educational television.

FIRST SEMESTER

ENGL	101	Introduction to College Writing*	3
TVRA	101	Video Editing for Broadcast	4
TVRA	120	Television Production	4
TVRA	125	Audio Production Techniques	4

SECOND SEMESTER

TRVA	105	Introduction to Broadcasting	3
TVRA	129	Writing for Television and Radio	3
TVRA	230	Advanced Television Production	4
		English foundation	3
		Mathematics foundation	3

THIRD SEMESTER

TVRA	227	Broadcast Journalism	3
TVRA	224	Electronic Field Production	3
TVRA	234	Television Directing	3
		Natural sciences distribution with lab	4
		Speech foundation	3

FOURTH SEMESTER

TVRA	*134*	*Media Appreciation (ARTD)*	3
TVRA	239	Broadcast Management and Engineering	3
TVRA	255	Advanced Broadcast Journalism	3
		Behavioral and social sciences distribution	3
		Health foundation	1-3

TOTAL CREDIT HOURS 60–62

* ENGL 101 if needed for ENGL 102/103 or general elective.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate problem solving skills that incorporate both the technical and aesthetic aspects of the process of writing and producing video/audio content for use in broadcast television, internet delivery, instructional support, or corporate marketing.
- Demonstrate the ability, both verbally and in writing, to incorporate design elements, organizational skills, and general education course material into understanding of target audience in the production processes.
- Understand and employ the technical procedures involved in completing digital video and audio projects in a production environment that includes studios and a server-based, collaborative workflow utilizing professional quality computer hardware and software.
- Demonstrate planning and preparation skills for efficient execution of the technical process including respect for copyright, distribution rights and safe practices, in a deadline-oriented environment.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

COMMUNICATION & BROADCASTING TECHNOLOGY

Television Production Certificate (R): 209

This certificate curriculum provides an intensive course of study focused on providing proficiency in television production skills, techniques, and procedures. This concentrated approach can assist those persons seeking first-time employment in television production, those planning to change careers into television production, and those currently working in television who wish to upgrade or expand their skills.

ENGL	101	Introduction to College Writing	3
TVRA	101	Video Editing for Broadcast	4
TVRA	105	Introduction to Broadcasting	3
TVRA	120	Television Production	4
TVRA	125	Audio Production Techniques	4
TVRA	224	Electronic Field Production	3
TVRA	230	Advanced Television Production	4
TVRA	234	Television Directing	3

TOTAL CREDIT HOURS 28

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate problem-solving skills that incorporate both the technical and creative aspects of the process of creating video/audio content for use in broadcast television, instructional delivery, or corporate marketing.
- Demonstrate the ability, verbally and in writing, to think critically and to demonstrate an understanding of target audience and production processes.
- Understand and employ the technical procedures involved in creating digital video and audio media in a server-based, collaborative environment.
- Demonstrate technical proficiency with professional-quality computer software used in nonlinear, digital video editing.
- Understand and employ contemporary design elements to create visually stimulating and aesthetically balanced graphics and video.
- Demonstrate proficiency with audio procedures to create video segments and final projects with balanced sound that falls within acceptable levels.
- Demonstrate planning and preparation skills for efficient execution of technical procedures.
- Develop constructive, organized work habits, including paperwork and computer file management.
- Demonstrate safe practices in the use of technical video and audio equipment and computer hardware and software.
- Develop a portfolio of video/audio projects demonstrating creativity and technical proficiency for prospective employment.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

COMMUNICATION STUDIES

Communication Studies AA: 609

The AA in communication studies provides students with an academic core basic to a liberal arts education and facilitates ease of transfer to communication programs at four-year institutions. The degree provides analytical and critical thinking skills that render recipients to be effective members of their communities, both professionally and personally. A strength of the communication degree is that it allows students to target their studies toward areas of interest within the field. Areas such as public relations, rhetoric, political communication, interpersonal communication, organizational communication, mass media, and others are popular at four-year colleges and universities.

Students are encouraged to seek assistance from speech communication faculty in making course selections to suit their academic and career goals. Completion of the curriculum requirements will lead to the award of the AA.

A suggested course sequence for full-time students follows; part-time students should consult an adviser.

FIRST SEMESTER

ENGL	101	Introduction to College Writing*. 3
HLTH	100	Principles of Healthier Living 1-3
MATH	*117*	*Elements of Statistics (MATF)*. 3
		Arts distribution 3
		Speech foundation 3
		World language or elective†. 3

SECOND SEMESTER

		English foundation 3
		Behavioral and social sciences distribution 3
		Humanities distribution 3
		Natural sciences distribution 3-4
		World language or elective†. 3

THIRD SEMESTER

COMM	250	Introduction to Communication Inquiry and Theory 3
		Arts or humanities distribution† 3
		Communication elective‡ 3
		Communication elective‡ 3
		World language or elective†. 3

FOURTH SEMESTER

LING	200	Introduction to Linguistics 3
		*Behavioral and social sciences distribution*** 3
		Natural sciences distribution with lab 4
		Communication elective‡ 3
		World language or elective. 3

TOTAL CREDIT HOURS 62–63

* ENGL 101 if needed for ENGL 102/103 or general elective.

† Some institutions, including the University of Maryland College Park, require completion of a World Language to the intermediate (202) level for communication studies majors. UMCP requires one literature and one history course, if you began your studies prior to fall 2012. Check degree requirements at transfer destination when choosing humanities and elective courses.

‡ Choice of 3 from the following Communication electives: COMM 121, COMM 204, COMM 220, or any 100 level Television Radio course.

** The two three-credit-hour behavioral and social sciences courses must be from different disciplines.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Research, analyze, organize, and deliver oral and written presentations designed to inform and persuade.
- Solve problems and work effectively in groups and teams. Recognize and evaluate different leadership styles.
- Demonstrate and apply critical thinking skills in communication, on the job, in relationships, and in the public forum.
- Understand the basics of the research process and theory building in social and behavioral sciences and the humanities.
- Develop a philosophy of effective and ethical communication within and across various contexts and cultures.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

COMPUTER APPLICATIONS

See also Computer Gaming and Simulation and Web Careers

Computer Applications AAS

The computer applications program is for students who want to use the computer as a tool of productivity. The general education courses, in conjunction with specialized courses, provide a broad foundation and sharpen students' skills in preparation for entry or advancement in today's workplace.

This curriculum, following the database systems track, provides training, skills, and knowledge that prepare students for employment as entry-level database programmers and designers or provides current professionals with essential database programming and design skills. Students will create Microsoft Access and web database applications, as well as write database user interfaces in the Visual Basic.Net environment.

This curriculum, following the information technology track, prepares students for a wide variety of positions involving the use of application software. Job possibilities include support in the areas of accounting, finance, marketing, sales, administration, and any area that requires the use of computer applications as a necessary tool of production. Emphasis is placed on the proficient use of software applications as well as the ability to use those applications as tools in decision making, managing people and information, communicating effectively, enhancing company viability, and addressing many of today's technology challenges. This track provides students with in-depth knowledge in more than one application area and has the potential to lead to Microsoft certification in those areas.

The computer applications program participates in an interdisciplinary web careers program, which includes an AAS and four certificate curricula; see pages 255–260 for more information.

In addition, an AA in computer gaming and simulation is offered with three specialized tracks; see pages 131–133 for more information.

DATABASE SYSTEMS TRACK: 311E

FIRST SEMESTER

CMAP	106	Computer Use and Management 3
ENGL	101	Introduction to College Writing*. 3
		Arts or humanities distribution 3
		Mathematics foundation 3
		Speech foundation 3

SECOND SEMESTER

CMAP	242	Introduction to Database Applications.3
CMAP	272	Professional Website Development. . . .4
CMSC	140	Introduction to Programming 3
		English foundation 3
		Behavioral and social science distribution 3

THIRD SEMESTER

CMAP	278	Web Application and Development Using Cold Fusion 4
CMSC	222	Visual Programming 3
		Natural sciences distribution with lab 4
		Elective†. 3-4

FOURTH SEMESTER

CMAP	245	Advanced Database Applications 3
CMAP	282	Web Application Development Using PHP and My SQL
		or
CMAP	288	Advanced Web Applications Development Using Cold Fusion 3
		Health foundation 1
		Elective†. 3-4
		Elective†. 3-4

TOTAL CREDIT HOURS FOR DATABASE TRACK 60–61

* ENGL 101 if needed for ENGL 102/103 or general elective.
† Select from CMAP and CMSC courses.

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

COMPUTER APPLICATIONS

Computer Applications AAS *(continued)*

INFORMATION TECHNOLOGY TRACK: 311B

FIRST SEMESTER

CMAP	106	Computer Use and Management 3
ENGL	101	Introduction to College Writing*. 3
		Arts or humanities distribution 3
		Health foundation 1-3
		Mathematics foundation 3

SECOND SEMESTER

CMAP	120	Introduction to Computer Applications 3
CMAP	272	Professional Website Development. . . .4
		Behavioral and social sciences distribution 3
		English foundation 3
		Elective† 3

THIRD SEMESTER

CMAP	232	Word Processing Applications. 3
CMAP	242	Introduction to Database Applications. 3
		Natural sciences distribution with lab 4
		Speech foundation 3
		Elective† 3

FOURTH SEMESTER

CMAP	252	Spreadsheet Applications 3
		Elective† 3
		Elective† 3
		Elective† 3
		Elective† 3-4

TOTAL CREDIT HOURS FOR INFORMATION TECHNOLOGY TRACK 60–61

* ENGL 101, if needed for ENGL 102/EN103, or elective.
Please consult an advisor or transfer institution for assistance with course selection.
† Select from any ACCT 221, ACCT 222, BSAD, CMAP, CMSC, ECON, GDES, MGMT.

PROGRAM OUTCOMES FOR DATABASE SYSTEMS TRACK

Upon completion of this program a student will be able to:

- Design and implement databases that meet user requirements.
- Utilize relational database concepts to design and create a database system.
- Develop a properly normalized relational database.

PROGRAM OUTCOMES FOR INFORMATION TECHNOLOGY TRACK

Upon completion of this program a student will be able to:

- Utilize productivity software (such as word processing, spreadsheet, database, and presentation software) to create, analyze, store, and report information.
- Locate and manage data on personal or collaborative technology.
- Present information using multiple electronic media.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

COMPUTER APPLICATIONS

Database Systems Certificate: 238

This certificate curriculum provides training, skills, and knowledge that prepare students for employment as entry-level database programmers and designers, or provides current professionals with essential database programming and design skills.

Students will create Microsoft Access and web database applications as well as write database user interfaces in the Visual Basic.Net environment.

CMAP 106	Computer Use and Management	.3
CMAP 242	Introduction to Database Applications	.3
CMAP 245	Advanced Database Applications	.3
CMAP 272	Professional Website Development	.4
CMAP 278	Web Application Development Using ColdFusion	.4
CMAP 282	Web Application Development Using PHP and MySQL	
	or	
CMAP 288	Advanced Web Application Development Using ColdFusion	.3
CMSC 140	Introduction to Programming	.3
CMSC 222	Visual Programming	.3

TOTAL CREDIT HOURS 26

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Describe the advantages, disadvantages, and appropriate uses of various database management systems (DBMS).
- Design a database system based on user requirements.
- Create entity-relationship diagrams that accurately describe a database structure.
- Understand and successfully utilize basic database design concepts such as primary and foreign keys, normalizing, bridge tables, alternate primary keys, and strong versus weak entities.
- Create a database system that successfully fulfills an organization's data requirements.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

COMPUTER APPLICATIONS

Information Technology Certificate: 213

This certificate curriculum is for the career professional who needs to become more proficient at using today's popular software applications as tools in decision making, managing people and information, communicating effectively, enhancing company viability, and addressing today's many technology challenges.

CMAP	106	Computer Use and Management	.3		
CMAP	120	Introduction to Computer Applications	.3		
CMAP	232	Word Processing Applications	.3		
CMAP	242	Introduction to Database Applications	.3		
CMAP	252	Spreadsheet Applications	.3		
CMAP	272	Professional Website Development	.4		

TOTAL CREDIT HOURS 19

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Apply file management skills effectively.
- Locate assigned information on the web with proficiency.
- Send an e-mail with a suitable subject line and an attachment.
- Create a word-processed document demonstrating the use of formatting, page setup, editing, printing, and an e-mail merge.
- Create a spreadsheet demonstrating the use of formatting, editing, and calculating with appropriate functions and formulas, charting, page setup, and printing.
- Create a presentation demonstrating the use of presentation techniques, layouts, formatting, editing, printing, clip art, WordArt, transitions, and animation.
- Create a database demonstrating the use of tables, queries, simple reports, and simple forms.
- Design and upload a home page containing header, body with links, and images.
- Demonstrate an understanding of the vocabulary of information technology.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

COMPUTER GAMING AND SIMULATION

See also Web Careers for Internet Games and Simulation Certificate

Computer Gaming and Simulation AA

Computer gaming and simulation is part of a rapidly growing and exciting new industry. Gaming is not only the fastest growing segment of the technology industry but also the fastest growing segment of the entertainment industry. Gaming is not just about entertainment - game technology is increasingly being applied in a variety of settings, from medical and corporate training to advocacy, advertising, and emergency response simulation. This interdepartmental degree presents students with an introduction to the skills needed to explore the emerging technology area of game and simulation development. Completion of this degree will expose students to core game development skills and theory, introduce gaming and computer simulation technology applications, and provide an introduction to computer graphics technology. Electives allow students an opportunity to further explore their particular area of interest.

Students may transfer this degree to complete a bachelor's degree in gaming and simulation at the University of Baltimore (UB); refer to the UB articulation plan for specific requirements and to Montgomery College's site: *www.studygaming.com*. See an adviser to discuss this and other transfer possibilities.

GAME ART AND ANIMATION TRACK (606D)

FIRST SEMESTER

ARTT	*102*	*Design Studio: 2-Dimensional (ARTD)**. . .3
CMAP	190	Introduction to Game and Simulation Development 4
ENGL	101	Introduction to College Writing** 3
GDES	120	Introduction to Digital Arts 4
		Health foundation 1

SECOND SEMESTER

CMAP	125	Introduction to Flash 4
CMAP	272	Professional Website Development 4
		English foundation 3
		Mathematics foundation 3

THIRD SEMESTER

GDES	140	Introduction to Animation 4
		Behavioral and social sciences distribution† 3
		Humanities distribution‡ 3
		Natural sciences distribution 3
		Speech foundation 3

FOURTH SEMESTER

CMAP	290	Building Game Worlds: Level Design, Mods, and Quality Assurance 4
GDES	240	Animation 2: 3D-Modeling** 4
		Behavioral and social sciences distribution† 3
		Natural sciences distribution with lab 4

TOTAL CREDIT HOURS FOR GAME ART AND ANIMATION TRACK 60–61

* ARTT 103 or other art distribution is recommended for transfer to UB.
† The two three-credit-hour behavioral and social sciences courses must be from different disciplines.
‡ One history or one philosophy is recommended for transfer to UB.
** ENGL 101 if needed for ENGL 102/103, or program elective.

GAME PROGRAMMING TRACK: 606A

FIRST SEMESTER

CMAP	190	Introduction to Game and Simulation Development 4
CMAP	125	Introduction to Flash‡‡ 4
ENGL	101	Introduction to College Writing* 3
		Health foundation 1
		Mathematics foundation 3

SECOND SEMESTER

GDES	120	Introduction to Digital Arts 4
CMAP	225	Flash Action Script for Web Publishing and Gaming 4
CMAP	272	Professional Website Development *or*
CMSC	140	Introduction to Programming† 3-4
		Arts or humanities distribution‡ 3
		English foundation 3

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

COMPUTER GAMING AND SIMULATION

Computer Gaming and Simulation AA *(continued)*

THIRD SEMESTER

Programming class (CMAP 278, CMSC 201), CMSC 203 or CMSC 226) 3-4
*Behavioral and social sciences distribution*** 3
Humanities distribution†† 3
Natural sciences distribution 3
Speech foundation 3

FOURTH SEMESTER

CMAP 290 Building Game Worlds: Level Design, Mods, and Quality Assurance 4
*Behavioral and social sciences distribution*** 3
Natural sciences distribution with lab 4
Programming class (CMAP 288, CMSC 214, CMSC 204, CMSC 230, CMSC 234) . . 3-4

TOTAL CREDIT HOURS FOR GAME PROGRAMMING TRACK 61–64

* ENGL 101 if needed for ENGL 102/103, or program elective.
† CMAP 272 is required for transfer to UB.
‡ ARTT 103 or other art distribution is recommended for transfer to UB.
** The two three-credit-hour behavioral and social sciences courses must be from different disciplines.
†† One history or one philosophy is recommended for transfer to UB.
‡‡ Students who have taken CMAP 125 may waive GDES 140 (formerly CG 210) as a prerequisite for GDES 240 (formerly CG 222)

GAME PRODUCTION AND DESIGN TRACK: 606E

FIRST SEMESTER

CMAP 190 Introduction to Game and Simulation Development 4
GDES 120 Introduction to Digital Arts 4
ENGL 101 Introduction to College Writing†† 3
*Arts or humanities distribution** 3
Health foundation 1

SECOND SEMESTER

CMAP 125 Introduction to Flash 4
CMAP 272 Professional Website Development 4
English foundation 3
Mathematics foundation 3

THIRD SEMESTER

CMAP 225 Flash Action Script for Web Publishing and Gaming 4
Behavioral and social sciences distribution† 3
Humanities distribution‡ 3
Natural sciences distribution 3
Speech distribution 3

FOURTH SEMESTER

CMAP 290 Building Game Worlds: Level Design, Mods, and Quality Assurance 4
Behavioral and social sciences distribution† 3
Natural sciences distribution with lab 4
Elective** 4

TOTAL CREDIT HOURS FOR GAME PRODUCTION AND DESIGN TRACK 60-61

* ARTT 103 or other Art Distribution is recommended for transfer to UB.
† The two three-credit-hour behavioral and social sciences courses must be from different disciplines.
‡ One history or one philosophy is recommended for transfer to UB.
** Elective: GDES 240 suggested. Students who have taken CMAP 125 may waive GDES 140 (formerly CG 210) as a prerequisite for GDES 240 (formerly CG 222). GDES 240 is required for transfer to UB.
†† ENGL 101, if needed for ENGL 102/103, or program elective.

(Continued)

COMPUTER GAMING AND SIMULATION

Computer Gaming and Simulation AA *(continued)*

PROGRAM OUTCOMES FOR GAME ART AND ANIMATION TRACK

Upon completion of this program a student will be able to:

- Analyze, design, and develop games or simulations in a team environment.
- Create 2D and 3D game art and animations and place in an online portfolio.
- Demonstrate an understanding of the vocabulary of gaming and simulation.

PROGRAM OUTCOMES FOR GAME PROGRAMMING TRACK

Upon completion of this program a student will be able to:

- Analyze, design and develop games or simulations in a team environment.
- Create game or simulation components using one of the programming languages in the degree program.
- Demonstrate an understanding of the vocabulary of gaming and simulation.

PROGRAM OUTCOMES FOR GAME PRODUCTION AND DESIGN TRACK

Upon completion of this program a student will be able to:

- Analyze, design, and develop games or simulations in a team environment.
- Prepare documentation appropriate to design and production responsibilities.
- Demonstrate an understanding of the vocabulary of gaming and simulation.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

COMPUTER PUBLISHING & PRINTING MANAGEMENT

Electronic Imaging Prepress Certificate (R): 197

This certificate curriculum is designed for students who are seeking to explore the growing field of electronic imaging for printing production. Students develop an understanding of the impact microcomputers have had on the printing industry and gain in-depth, hands-on technical knowledge of the software currently used in the graphic arts production process. This curriculum allows students to explore the tools, concepts, and methodology of electronic image preparation. Students gain experience in electronic page assembly and scanning applications utilizing industry-standard computer equipment. Students develop an understanding of how text, line art, digital illustrations, scanned halftones, and process color images are captured, manipulated, corrected, and imposed in order to be printed successfully.

PRNT	125	Introduction to QuarkXPress	4
PRNT	131	Photoshop Digital Production for Printing and Publishing I	4
PRNT	171	Electronic Publishing I	4
PRNT	232	Photoshop Digital Production for Printing and Publishing II	4
		Professional electives*	3–4
		TOTAL CREDIT HOURS	**19–20**

* Select CMAP 272, GDES 116, GDES 120, GDES 121, or GDES 127.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Seek employment in the printing and publishing (or related) industry.
- Use industry-specific hardware/software to perform operations for producing files in a digital workflow to industry standards.
- Work effectively both individually and as a member of a diverse production team.
- Demonstrate skills and attitudes that foster lifelong learning and professionalism.
- Apply basic problem-solving skills to prepress digital workflow.
- Read, comprehend, and communicate written, verbal, and visual information.

COMPUTER PUBLISHING & PRINTING MANAGEMENT

Printing Technology Certificate (R): 176

This certificate curriculum is designed to provide skills, knowledge, and related experiences needed for entry-level jobs in the graphic arts/printing industry. This curriculum may also be used by those people currently employed in related fields to expand or upgrade skills to enhance their employment capabilities. The curriculum is designed to be completed by employed students in four semesters. Students may apply credits earned in the certificate curriculum to the associate's degree.

PRNT	115	Introduction to Bindery and Finishing	3
PRNT	116	Principles of Offset Presses I	3
PRNT	171	Electronic Publishing I	4
PRNT	216	Principles of Offset Presses II	3
		Program elective*	3–4
		TOTAL CREDIT HOURS	**16–17**

* Select ARTT 103, ARTT 104, CG 120, GDES 121, GDES 124, PRNT 131, or PRNT 281. Department approval is required to apply any elective not on this list to the award of the certificate.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Seek employment in the printing and publishing (or related) industry.
- Produce printed products on conventional and digital printing presses to industry standards.
- Read, comprehend, and communicate written, verbal, and visual information.
- Perform folding and finishing operations to industry standards.
- Demonstrate a working knowledge of the vocabulary, terminology, and production flow of the printing and publishing industry.

COMPUTER SCIENCE AND TECHNOLOGIES

See also Computer Gaming and Simulation, Network and Wireless Technologies, and Web Careers

The computer science and technologies curricula include two transfer degree tracks and one certificate relevant to current knowledge and practice in the fields of computer science and information science. Completion of all the degree requirements of either the computer science track or the information systems track will lead to the award of the AA in computer science and technologies.

The computer science and technologies program participates in an interdisciplinary web careers program, which includes an AAS and four certificate curricula.

(Continued)

COMPUTER SCIENCE AND TECHNOLOGIES

Computer Science: 107

Computer Science and Technologies AA

This transfer degree track is for students who plan to transfer to a four-year degree program in computer science or for students in mathematics, science, or technical areas who wish to acquire skills in computer software development for scientific and technical applications. The courses provide an academic core of the theoretical concepts of computer science combined with the fundamentals of structured design and development techniques for computer programming.

Because of the academic level of this track, students should be able to demonstrate college-level skills in English, mathematics, and elementary programming.

FIRST SEMESTER

CMSC	140	Introduction to Programming 3
ENGL	101	Introduction to College Writing* 3
MATH	*181*	*Calculus I (MATF)* 4
		Art distribution 3
		Behavioral and social sciences distribution† 3

SECOND SEMESTER

CMSC	203	Computer Science I 4
MATH	182	Calculus II 4
		English foundation 3
		Health foundation 1
		Speech foundation 3

THIRD SEMESTER

CMSC	204	Computer Science II. 4
		Humanities distribution 3
		Natural sciences distribution with lab 4
		Elective ‡ 3

FOURTH SEMESTER

CMSC	207	Introduction to Discrete Structures. . . .4
		Arts or humanities distribution 3
		Behavioral and social sciences distribution† 3
		Natural sciences distribution 3
		Elective ‡ 2-3

TOTAL CREDIT HOURS 60–63

* ENGL 101 if needed, for ENGL 102/103 or otherwise any program elective or MATH 282 or MATH 284. Please consult an advisor or transfer institution for assistance with course selection.

† The two three-credit-hour behavioral and social sciences courses must be from different disciplines.

‡ See department adviser for elective or equivalent course substitution if appropriate. Not all CMSC courses transfer to all institutions. Please consult an adviser or the transfer institution before selecting elective courses.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Apply logical skills and mathematical concepts to analyze, design, and implement computer algorithms and programs.
- Demonstrate proficiency in a high level programming language.
- Demonstrate proficiency in current design techniques, i.e. Object Oriented Design.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

COMPUTER SCIENCE AND TECHNOLOGIES

Information Systems: 109

Computer Science and Technologies AA

This transfer degree track is for students who plan to transfer to a four-year program such as information systems or information management. The curriculum is designed to present a broad coverage of concepts applying to the theory and management of information, analytical techniques in the development of computer-based information systems, and practical experience with business programming.

Because of the variation in such programs at four-year institutions, students are urged to consult an adviser about specific course selections.

FIRST SEMESTER

CMSC	110	Computer Concepts* 3
ENGL	101	Introduction to College Writing† 3
		Arts distribution 3
		Behavioral and social sciences distribution‡ 3
		Mathematics foundation 3-4

SECOND SEMESTER

CMSC	140	Introduction to Programming 3
		Elective** 3
		English foundation 3
		Natural sciences distribution with lab 4
		Speech foundation 3

THIRD SEMESTER

CMSC	243	Systems Analysis and Design 3
		Behavioral and social sciences distribution 3
		Humanities distribution 3
		Elective** 3
		Elective** 3

FOURTH SEMESTER

		Arts or humanities distribution 3
		Health foundation 1-3
		Natural sciences distribution 3-4
		Elective** 4
		Elective** 3

TOTAL CREDIT HOURS 60–63

* May be replaced by another CMSC course with departmental consent.

† ENGL 101, if needed for ENGL 102/103, or program elective. Please consult an advisor or transfer institution for assistance with course selection.

‡ The two three-credit-hour behavioral and social sciences (BSSD) courses must be from different disciplines. Contact department advisor for transfer requirements for specific schools. Students applying to business schools should consider using economics as an elective because it meets transfer and BSSD requirements. If you have any questions, please see a department adviser.

** Select electives based on transfer institution requirements. See an adviser for assistance and use ARTSYS for Maryland transfer school requirements, *http://artweb.usmd.edu*. Note: There must be at least 12 credits total at the 200-level for an AA degree.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Analyze components of the computer information systems.
- Analyze, design, and implement computer programs using a high level programming language.
- Demonstrate proficiency in analysis and design techniques.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

COMPUTER SCIENCE AND TECHNOLOGIES

Computer Programming Certificate: 108

This certificate curriculum emphasizes software development and computer programming skills. The curriculum provides flexibility in the student's choice of programming languages. Students should consult an adviser before beginning the curriculum.

CMSC	110	Computer Concepts *	3
CMSC	140	Introduction to Programming	3
		Intermediate languages†	6–7
		Advanced language‡	3–4
		CMSC elective *or* department-approved CMAP elective	3
		TOTAL CREDIT HOURS	**18–20**

* May be replaced by another CMSC course with department consent.
† Select two courses from CMSC 201, CMSC 203, CMSC 222, CMSC 226, or other department-approved language.
‡ The advanced language must correspond to one of the intermediate languages chosen.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Analyze, design, and implement computer programs.
- Demonstrate working knowledge in one high-level programming language.
- Demonstrate proficiency in a second high-level programming language.

CONSTRUCTION MANAGEMENT

There are two tracks leading to the AAS in architectural and construction technology: architectural technology and management of construction. In addition, two certificates are offered: CAD for the building professional and management of construction. Both of the AAS tracks are designed to prepare graduates for entry into paraprofessional positions in the construction-industry and architecture upon completion of the curriculum. (See Architectural Technology)

Management of Construction (R): 303

Architectural/Construction Technology AAS

This AAS track is designed to prepare graduates to organize, operate, manage, and control the unique and demanding systems, procedures, and services in the construction industry, both on the job site and in the contractor's office. Areas of study include cost control, planning, scheduling, controlling and expediting construction, contract bidding and estimating, personnel management, and the overall management of construction operations. This curriculum prepares students for construction management careers in any type or size of construction firm.

The curriculum is not designed as a transfer program except to institutions having a construction curriculum. A student seeking a four-year bachelor's degree must meet with the program coordinator in the management of construction program or the applied technologies department chair to work out a suitable program of study.

A suggested course sequence for full-time students follows; all students should consult an adviser in the management of construction program.

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

CONSTRUCTION MANAGEMENT

Management of Construction (R): 303 *(continued)*

FIRST SEMESTER

CMGT	100	Construction Methods and Materials . . 3
CMGT	110	Construction Plan Reading 3
CMGT	135	Construction Field Operations 3
ENGL	101	Introduction to College Writing* 3
		Mathematics foundation 3

SECOND SEMESTER

CMGT	190	Computer Applications in Construction 3
CMGT	210	Construction Management 3
		English foundation 3
		Speech foundation 3
		Arts or humanities distribution 3

THIRD SEMESTER

CMGT	250	Construction Surveying 3
CMGT	270	Construction Estimating 3
CMGT	275	Construction Planning and Scheduling 3
		Behavioral and social science distribution 3
		Professional elective† 3

FOURTH SEMESTER

CMGT	280	Mechanical and Electrical Systems 3
CMGT	285	Practical Construction Law 3
CMGT	290	Professional Practicum 1
		Health foundation 1
		Natural sciences distribution with lab 4
		Professional elective† 3

TOTAL CREDIT HOURS 60

* ENGL 101 if needed for ENGL 102/103 or elective.
† Choice of Professional electives: ARCH 203, ARCH 204, ARTT 100, ARTT 102, ENGL 101.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate a thorough understanding of the principles and methods used in the installation of materials and building components including structural, nonstructural, mechanical, and electrical systems.
- Demonstrate technical mastery of the methods and procedures of reading architectural, structural, and mechanical drawings.
- Assist a field manager or project manager with basic project administration procedures both in the field and at the office.
- Demonstrate technical mastery in the computer software and surveying equipment used for project administration, estimating, scheduling, and surveying.
- Develop a working knowledge of construction estimating and scheduling procedures and the legal implications applicable to a construction project.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

CONSTRUCTION MANAGEMENT

Management of Construction Certificate (R): 142

This certificate curriculum is designed to serve personnel presently employed in construction-related industries who might not want to complete an associate's degree. Students will be able to enroll in specific professional/academic courses that will lead to an upgrading of their professional competence.

The certificate provides students with formal recognition of academic achievement for completing selected courses from the management of construction AAS track. The student may transfer to the AAS track.

CMGT 100	Construction Methods and Materials	3
CMGT 110	Construction Plan Reading	3
CMGT 135	Construction Field Operations	3
CMGT 190	Computer Applications in Construction	3
CMGT 210	Construction Management	3
CMGT 270	Construction Estimating	3
CMGT 275	Construction Planning and Scheduling	3
CMGT 285	Practical Construction Law	3
ENGL 101	Introduction to College Writing	3
	Professional electives*	6–8
	TOTAL CREDIT HOURS	**33–35**

* Professional electives: ACCT 211, BLDG electives, COED 260, ARCH 101, ARCH 103, ARCH 183, CMGT 250, CMGT 280, CMGT 290, CMGT 291, MATH 165, MGMT 207.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate a thorough understanding of the principles and methods used in the installation of materials and building components including structural, nonstructural, mechanical, and electrical systems.
- Demonstrate technical mastery of the methods and procedures of reading architectural, structural, and mechanical drawings.
- Assist a field manager or project manager with basic project administration procedures both in the field and at the office.
- Demonstrate technical mastery in the computer software and surveying equipment used for project administration, estimating, scheduling, and surveying.
- Develop a working knowledge of construction estimating and scheduling procedures and the legal implications applicable to a construction project.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

CRIMINAL JUSTICE

Criminal Justice AAS (R): 314

The AAS in criminal justice is designed to prepare students for careers within the criminal justice system. The program offers a combination of liberal arts and specialized career courses to help students upon entry into the criminal justice field. The curriculum is offered for those already employed in the criminal justice profession as well as for high school students interested in pursuing careers with local, state, or private agencies within the field. Students are encouraged to seek assistance from criminal justice faculty in making course selections to suit their career goals and interests. Those students interested in transferring to obtain a bachelor's degree from a four-year college or university should consult advisers regarding our AA degree in general studies.

FIRST SEMESTER

ENGL	101	Introduction to College Writing*	3
CCJS	*110*	*Administration of Justice (BSSD)*	3
SOCY	*100*	*Introduction to Sociology (BSSD)*	3
		Mathematics foundation	3
		Speech foundation	3

SECOND SEMESTER

PSYC	102	General Psychology	3
CCJS	201	Introduction to Law Enforcement	
		or	
CCJS	230	Introduction to Corrections	3
CCJS	221	Criminal Law	3
		Arts or humanities distribution	3
		English foundation	3

THIRD SEMESTER

POLI	101	American Government	3
CCJS	215	Organization and Administration	3
		Health foundation	2
		Natural sciences distribution with lab	4
		CCJS elective†	3

FOURTH SEMESTER

CCJS	242	Theory and Practice	3
		CCJS or behavioral and social science elective	3
CCJS	244	Contemporary Issues	3
		CCJS elective†	3
		Elective	3

TOTAL CREDIT HOURS 60

* ENGL 101, if needed, for ENGL 102/103 or general elective.

† CCJS electives include CCJS 211, CCJS 216, CCJS 222, CCJS 232, CCJS 246, CCJS 250, and CCJS 255. Students can also use CCJS 201 or CCJS 230 as a CCJS elective if not already used to satisfy a program requirement.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate an understanding of the criminal law and the criminal justice process (police, courts, and corrections).
- Explain the function and role of various criminal justice practitioners in the operation of an ethical and professional system of justice that exists within a diverse society.
- Analyze the history, functions, policies, and procedures used in each subsystem of justice and creatively offer alternatives to current practices.
- Explain the impact of political and economic considerations as it relates to criminal justice theory, research, practice, and policy.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

CYBERSECURITY

Cybersecurity AAS (G): 356A

This AAS degree prepares students for entry-level positions in cybersecurity. The program emphasizes computer security and information assurance concepts augmented with current industry standard techniques. Topics cover threats and vulnerabilities, prevention at the technical (hardware and software) and human levels, detection, response, and management aspects of security.

The program prepares entry-level computer technicians with cybersecurity expertise and also offers students a transfer option to four-year institutions. The proposed program of study is designed to address the needs for increasing the number of trained workers qualified to work in cybersecurity in the homeland security industry. The program is expected to meet National Security Telecommunications and Systems Security Instruction (NSTISSI) 4011 and 4013 standards. It will also help prepare students to sit for a variety of industry certifications, including the Computing Technology Industry Association's (CompTIA) A+, Network+ and Security+ certifications; Cisco Certified Network Associate (CCNA) certification; and the Security Certified Network Professional certification.

FIRST SEMESTER

CMSC	110	Computer Concepts	3
NWIT	127	Microcomputer Essentials	3
NWIT	151	Introduction to Networking	3
NWIT	252	Cisco Networking 2	3
		English foundation	3
		Health foundation	1

SECOND SEMESTER

NWIT	173	Network Security	3
NWIT	253	Cisco Networking 3	3
NWIT	254	Cisco Networking 4	3
		Mathematics foundation	3-4
		Speech foundation	3

THIRD SEMESTER

NWIT	203	Microsoft Windows Server	3
NWIT	245	Hardening the Infrastructure	3
PHIL	140	Introduction to the Study of Ethics	3
		Natural sciences distribution with lab	4

FOURTH SEMESTER

		Behavioral and social sciences distribution	3
NWIT	246	Network Defense and Countermeasures	3
		Arts or humanities distribution	3
NWIT	290	Information Security Capstone	3
		Elective*	3-4

TOTAL CREDIT HOURS 59–61

* Approved Electives: ENGL 101, MGMT 288, NWIT 140, NWIT 170, NWIT 199, NWIT 207, NWIT 255, NWIT 256, NWIT 261, NWIT 262, NWIT 263, NWIT 269, NWIT 275.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Apply software patches to operating systems and applications.
- Assess a computer system's security vulnerabilities using appropriate resources.
- Use standard software tools to detect attempted security breaches of computer systems.
- Implement computer network security defenses.
- Explain their professional responsibility in the areas of individual privacy, intellectual property rights, and ethics and codes of conduct.
- Sit for the following certification exams: CCNA (Cisco Certified Network Associate) certificate, CompTIA Network+ certificate, CompTIAScurity+ certificate, and Security Certified Network Professional (SCNP).

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

CYBERSECURITY

Advanced Network Security Certificate (G): 252

This career curriculum prepares student for entry-level careers in cybersecurity. Intended for those already employed in computing or who have a computing background, the certificate emphasizes computer security and information assurance concepts augmented with current industry standard techniques. Topics cover threats and vulnerabilities, prevention at the technical (hardware and software) and human levels, detection, response, and management aspects of security. This program of study is built upon the National Security Telecommunications and Systems Security Instruction (NSTISSI) 4011 and 4013. Each course in this certificate prepares the students in part to sit for the respective professional certifications. Range of occupations applicable to this certificate are: network analyst, network administrator, IT manager, internet security specialist, IT compliant specialist.

NWIT	173	Network Security	3
NWIT	245	Hardening the Infrastructure	3
NWIT	246	Network Defense and Countermeasures	3
NWIT	270	Information Security Capstone	3
NWIT	275	Wireless Security	3
MGMT	288	Disaster Recovery and Risk Management	3

TOTAL CREDIT HOURS 18

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Describe: security threats, integrity, confidentiality, and availability in security information.
- Describe security ramifications, technology weaknesses, configuration weaknesses, policy weaknesses, and human errors.
- Describe authentication, understand password issues, Kerberos assumptions, challenge handshake authentication protocol, security tokens, and biometrics.
- Define common Internet components, and identify techniques used in web hacking, attacks and malicious code, IP fragmentation attacks, spoofing, man in the middle, and TCP session hijacking.
- Investigate advanced concepts and procedures related to the transmission control protocol/internet protocol (TCP/IP).
- Secure version of internet protocol (IP) and internet protocol security (IPSec).
- Describe Web security, SSL and TLS, HTTPS vulnerabilities, javascript, activex, and buffer overflows.
- Secure workstations and servers running current Windows OS software and test the effectiveness of various security measures.
- Investigate measures that can help ensure business continuity in the event of a disaster, such as contingency planning and power and backup issues.
- Identify the basic components of a layered structure for network defense architecture, describe access control objectives, and auditing concepts.
- Analyze network operations risks; conduct network penetration tests; implement network countermeasures.

This program is currently not eligible for federal and state financial aid.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

CYBERSECURITY

Cisco Certified Network Associate + Security Preparation Certificate (G): 253

This career curriculum prepares students for entry-level positions in cybersecurity. Intended for those already employed in computing or who have a computing background, the certificate prepares the student to install, operate, and troubleshoot medium-sized router and switched networks including implementation and verification of connections to remote sites in a WAN. It includes basic introduction to wireless networking concepts and hands-on performance-based skills. The certificate instructs the student in basic and intermediate cybersecurity skills, such as how to develop a security infrastructure, recognize vulnerabilities to networks, and mitigate security threats. This cybersecurity curriculum emphasizes core security technologies and the installation, troubleshooting, and monitoring of network devices to maintain integrity, confidentiality and availability of data and devices. It provides the foundation for students to sit for the following industry-recognized certifications: Network+, Security+, CCNA (Cisco Certified Network Associate), and the Cisco CCNAScurity certification.

NWIT 151 Introduction to Networking 3
NWIT 252 Cisco Networking 2 3
NWIT 253 Cisco Networking 3 3
NWIT 254 Cisco Networking 4 3
NWIT 261 Managing Network Security I 4

TOTAL CREDIT HOURS 16

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Describe common network devices; the OSI model; common network protocols; features of LANs and WANs; types of network topologies; bandwidth.
- Describe characteristics of Ethernet networks; client/server networks; function of network devices; router serial ports; characteristics of WAN technologies.
- Describe basics of Ethernet technologies; framing process; MAC; CSMA/CD; types of duplex; 10/100/1000/10000BPS Ethernet technologies.
- Describe commands used to name a router, how administrators set passwords on a router, the use of the show commands, the command and steps required to configure a serial interface, the command and steps required to configure an Ethernet interface, how an administrator executes changes to a router, how an administrator saves changes to a router, the command and steps required to configure an interface description, the command and steps required to configure a log-in banner, the command and steps required to configure host tables, the purpose of backup documentation, and the steps for password recovery on a router.
- Describe the basic principles of routing, the difference between routed and routing protocols, what interior and exterior protocols are used for in routing, the difference between static versus dynamic routes, how static routes are configured, how default routes are configured, some methods for troubleshooting static route configurations, why dynamic routing protocols are necessary, distance vector routing, link-state routing, and how different routing protocols are used in context.
- Describe classless interdomain routing (CIDR); calculate subnets with variable-length subnet masking (VLSM); describe route aggregation with VLSM and Routing Information Protocol version 2 (RIPv2); configure, verify and troubleshoot RIPv2, EIGRP, and OSPF.
- Describe microsegmentation, how a switch learns addresses, and switch forwarding; describe switches and collision domains and switches and broadcast domains; configure LAN switches; verify LAN switch configuration; and manage LAN switches.

(Continued)

CYBERSECURITY

Cisco Certified Network Associate + Security Preparation Certificate (G): 253 *(continued)*

PROGRAM OUTCOMES *(continued)*

- Describe the goals of redundant topologies; define Spanning Tree Protocol (STP); describe the stages of spanning-tree port states and election of designated ports; describe the stages of selecting a root bridge; describe Path cost; set STP timers; explain how STP helps convergence; and describe Rapid Spanning Tree Protocol (RSTP).
- Explain what VLANs are; cite reasons to create VLANs and describe the benefits of VLANs; name and describe the methods of VLAN implementation; create, verify, and delete VLAN configurations; describe basic VLAN troubleshooting methods.
- Explain the differences between LANs and WANs; identify the devices used in a WAN; list WAN standards; describe WAN encapsulation; classify the various WAN link options; differentiate between packet-switched and circuit-switched WAN technologies; describe the steps in WAN design.
- Identify and describe the basic components that define Point-to-Point Protocol (PPP) communication; define and describe the use of link control protocol (LCP) and Network Control Protocol (NCP) frames in PPP; describe the process for configuring and verifying PPP; describe and explain PPP authentication; define and describe the use of password authentication; define and describe the use of Challenge Handshake Authentication Protocol (CHAP).
- Describe Frame Relay services, standards, and components; describe Local Management Interface (LMI) features; describe the use of Frame Relay subinterfaces; configure, verify, and troubleshoot basic Frame Relay.
- Describe industry security terminology and acronyms, basic security vulnerabilities, and design and manage a security policy.
- Design and implement trust and identity technology at layer 2 and 3 of the OSI Model.
- Configure, monitor, and maintain advanced router firewall installation.
- Implement Secure Network Design.

This program is not currently eligible for federal and state financial aid.

DIAGNOSTIC MEDICAL SONOGRAPHY

Diagnostic Medical Sonography AAS (TP/SS)

Students who plan to major in diagnostic medical sonography will be assigned the temporary major of pre-diagnostic medical sonography, with POS code 530, until they are officially admitted to the diagnostic medical sonography program. Students may take preparatory courses and courses that fulfill General Education requirements during the waiting period. As an alternative to being assigned a temporary major, students waiting for admission to the diagnostic medical sonography program may choose to major in general studies or any other open-admission program. The Admissions and Records Office at Takoma Park/Silver Spring will assign a matriculated code once students are admitted to the diagnostic medical sonography program.

This curriculum, accredited by the Commission on Accreditation of Allied Health Education Programs, requires a minimum of two years of didactic and clinical experience. It provides a foundation for graduates to become highly skilled in providing patient services using diagnostic ultrasound under the supervision of a physician in hospitals, offices, and other health care settings. Reflected ultrasound waves are utilized by the sonographer to display images on a video monitor of body tissues. The sonographer is responsible for performing the examinations, providing patient care, and recording anatomical, pathological, and/or physiological data for interpretation by the physician.

Admission requirements, including specific selection criteria, have been established by the Board of Trustees; see the Admissions and Registration section of this catalog.

Students need to meet prerequisites for first-semester courses. Each of the diagnostic medical sonography courses builds on materials offered in previous courses. Students in this curriculum are required to achieve a grade of C or better in each sonography course and maintain current CPR certification while enrolled in the program.

Upon completion of this curriculum, the graduate will receive an AAS and be eligible to apply to take the national registry exam, administered by the American Registry of Diagnostic Medical Sonographers, in one or more of the following specialties: abdominal sonography, breast sonography, obstetrics/gynecology sonography, adult echocardiography, pediatric echocardiography, or vascular sonography.

GENERAL EDUCATION REQUIREMENTS

Foundation Courses

		English foundation (ENGF) 3
		Mathematics foundation 3
COMM	*108*	*Introduction to Human Communication (SPCF)* 3

Distribution Courses

		Arts or humanities distribution 3
PSYC	*102*	*General Psychology (BSSD)*. 3
BIOL	*212*	*Human Anatomy and Physiology I (NSLD)** 4
BIOL	*213*	*Human Anatomy and Physiology II (NSLD)* 4

PROGRAM REQUIREMENTS

ENGL	101	Introduction to College Writing† 3
HINM	115	Medical Terminology I 2
HINM	116	Medical Terminology II. 2
HINM	120	Concepts of Disease. 3
SONO	101	Orientation to Diagnostic Medical Sonography 3
SONO	105	Acoustical Physics I. 2
SONO	204	Introduction to Sectional Anatomy 3
SONO	205	Acoustical Physics and Instrumentation II 2
SONO	224	Seminar—Diagnostic Medical Sonography. 1
SONO	275	Sonography Practicum 1
SONO	276	Sonography Practicum V 1
SONO	277	Sonography Practicum I. 2
SONO	278	Sonography Practicum II 4
SONO	279	Sonography Practicum IV. 1
SONO	280	Sonography Practicum III. 4

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

DIAGNOSTIC MEDICAL SONOGRAPHY

Diagnostic Medical Sonography AAS (TP/SS) *(continued)*

GENERAL SONOGRAPHY TRACK

SONO 112 Abdominal Sonography I 3
SONO 123 Obstetrics/Gynecology Sonography I . .3
SONO 210 Breast Sonography 1
SONO 232 Abdominal Sonography II 3
SONO 243 Obstetrics/Gynecology Sonography II . .3

TOTAL CREDIT HOURS FOR GENERAL SONOGRAPHY TRACK 70

ECHOCARDIOGRAPHY TRACK

SONO 229 Pediatric Echocardiography 3
SONO 245 Adult Echocardiography I 3
SONO 248 Adult Echocardiography II. 3

TOTAL CREDIT HOURS FOR ECHOCARDIOGRAPHY TRACK 66

VASCULAR TRACK

SONO 246 Vascular Sonography I 3
SONO 256 Vascular Sonography II. 3

TOTAL CREDIT HOURS FOR VASCULAR TRACK 63

* Students should check the prerequisite for BIOL 212.
† ENGL 101, if needed for ENGL 102/103.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Obtain, review, and integrate pertinent patient history and supporting clinical data to facilitate optimum diagnostic results.
- Perform appropriate procedures and record anatomical, pathological, and/or physiological data for interpretation by a physician.
- Record, analyze, and process diagnostic data and other pertinent observations made during the procedure for presentation to the interpreting physician.
- Exercise discretion and judgment in the performance of sonographic and/or other non-invasive diagnostic services.
- Demonstrate appropriate communication skills with patients and colleagues.
- Act in a professional and ethical manner.
- Provide patient education related to medical ultrasound and/or other noninvasive diagnostic vascular techniques and promote principles of good health.
- Recognize the sonographic appearance of normal and abnormal tissue structures.
- Protect the patient's right to privacy.
- Maintain confidentiality.
- Perform within the scope of practice.
- Understand the fundamental elements for implementing a quality assurance and improvement program and the policies, protocols, and procedures for the general function of the ultrasound laboratory.
- Recognize the importance of continuing medical education.

EDUCATION

The Department of Education offers curricula designed to prepare students for working with children in a variety of settings: three early childhood education curricula (AAS, certificate, and letter of recognition) and the teacher education transfer program (AAT).

Early Childhood Education Technology AAS: 315

This curriculum is designed to prepare students to work with children from infancy through age eight in a variety of early childhood settings. The curriculum has a core of 34 credit hours directly related to early childhood education. The curriculum is designed so that it can be completed within four semesters, but it can be extended over a longer time. A suggested course sequence for full-time students follows; part-time students should consult an adviser.

FIRST SEMESTER

COMM	*108*	*Introduction to Human Communication*	.3
EDUC	135	Child Growth and Development	.3
ENGL	101	Introduction to College Writing*	.3
HLTH	*100*	*Principles of Healthier Living (HLHF)*	.1
PSYC	*102*	*General Psychology (BSSD)*	.3
		Mathematics foundation	.3

SECOND SEMESTER

EDUC	115	Child Health, Safety, and Nutrition	.3
EDUC	136	Curriculum Planning in Early Childhood Education	.3
EDUC	153	Infant and Toddler Development and Curriculum Planning	
		or	
EDUC	154	School Age Child Care	.3
EDUC	208	Observation and Assessment of Young Children	.3
		English foundation	.3

THIRD SEMESTER

EDUC	170	First Start: Care of Infants and Toddlers with Disabilities	.3
EDUC	180	Children's Literature	.3
EDUC	210	Curriculum Seminar: Science and Mathematics for Young Children	.2
EDUC	212	Curriculum Seminar: Creative Arts for Young Children	.2
		Humanities foundation	.3
GEOG	*101*	*Introduction to Geography*	.3

FOURTH SEMESTER

EDUC	224	Social-Emotional Development in Young Children	.3
EDUC	227	Administering Early Childhood Programs	.3
EDUC	233	Practicum in Early Childhood Education	.3
		Arts distribution	.3
		Natural sciences distribution with lab	.4

TOTAL CREDIT HOURS 63

* ENGL 101, if needed for ENGL 102/103, or general elective.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Describe the theories and principles of child development and learning and apply the theories and principles to his or her classroom teaching.
- Identify the issues, trends, and historical events in the field of early childhood education.
- Use systematic observations, documentation, and other effective assessment strategies in a responsible way to positively influence children's learning and development.
- Demonstrate knowledge of supporting and empowering families and communities through respectful, reciprocal relationships.
- Demonstrate understanding of content areas and apply developmentally appropriate approaches to enhance children's learning and development.

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

EDUCATION

Early Childhood Education Technology AAS: 315 *(continued)*

PROGRAM OUTCOMES *(continued)*

- Create healthy, respectful, supportive, and challenging learning environments to promote children's learning and development.
- Design, implement, and evaluate meaningful, challenging curricula to promote positive outcomes for all young children.
- Be reflective practitioners to reflect and use the most effective methods of guidance and teaching when working with children.
- Identify and conduct themselves as early childhood professionals who use ethical guidelines and National Association for the Education of Young Children standards related to early childhood practice and who are advocates for sound educational practices and policies.
- Demonstrate excellent written, verbal, critical thinking, and problem-solving skills, which will allow them to effectively make connections between prior knowledge/ experience and new learning.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

EDUCATION

Early Childhood Education Certificate: 177

This certificate curriculum is designed to prepare students to work in a variety of child care settings with children from infancy through age eight. The curriculum consists of a core of 21 credit hours directly related to early childhood education. The curriculum is designed to be completed within two semesters, or over a longer period of time if a student chooses. Students may apply earned credits toward an AAS in early childhood education technology.

PROGRAM REQUIREMENTS

EDUC	115	Child Health, Safety, and Nutrition	3
EDUC	135	Child Growth and Development	3
EDUC	136	Curriculum Planning in Early Childhood Education	3
EDUC	153	Infant and Toddler Development and Curriculum Planning	
		or	
EDUC	154	School-Age Child Care	3
EDUC	180	Children's Literature	3
EDUC	208	Observation and Assessment of Young Children	3
EDUC	233	Practicum in Early Childhood Education	3
ENGL	101	Introduction to College Writing	3
PSYC	102	General Psychology	3
COMM	108	Introduction to Human Communication	3

TOTAL CREDIT HOURS 30

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Describe theories and principles of child development and learning and apply the theories and principles to the classroom teaching.
- Use systematic observations, documentation, and other effective assessment strategies in observing and working with children.
- Apply developmentally appropriate teaching practices and guidance approaches to enhance children's learning and development.
- Develop and implement curriculum plans to promote children's learning in the areas of physical/motor, social, emotional, cognitive, and language development.
- Be reflective practitioners to reflect and use the most effective methods of guidance and teaching when working with children.
- Demonstrate written, verbal, critical thinking, and problem-solving skills, which will allow them to effectively make connections between prior knowledge/experience and new learning.
- Teach young children in an early childhood setting with the required disposition, knowledge, skills, and competencies.
- Work on the AAS with good understanding of the required content areas.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

EDUCATION

Early Childhood Leadership and Management
Letter of Recognition: 819

This nine-credit program is designed for early childhood administrators, lead teachers, trainers, and family child care providers. The curriculum provides students the opportunity to develop and enhance their management and leadership skills. Only EDUC 215 (one of the three courses) is applied toward an AAS in early childhood education technology. [Note: To enroll in any of these three courses, students must either satisfy prerequisites or seek consent of the department.]

EDUC	227	Administering Early Childhood Programs	3	EDUC 240	Integration Seminar in Early Childhood Leadership and Management 3
EDUC	230	Early Childhood Leadership	3		

TOTAL CREDIT HOURS 9

Upon successful completion of this course of study, and application to the Admissions and Records Office, the letter of recognition in early childhood leadership and management will be issued by the chief enrollment services and financial aid officer.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify public policy issues, state and county regulations, and the accreditation standards set by the National Association for the Education of Young Children (NAEYC) and the Maryland State Department of Education (MSDE).
- Use NAEYC accreditation criteria to evaluate the early childhood programs.
- Explain the administrator's role in advocacy, including current issues, concerns, and challenges facing children, teachers, parents, and the early childhood profession.
- Apply NAEYC code of ethical conduct to deal with ethical issues.
- Develop management skills for opening an early childhood center or school, including facility operation, fiscal planning, budget preparation, and budget oversight.
- Analyze assessment and evaluation tools for curriculum improvement and staff performance.
- Evaluate personnel policies and procedures required to recruit, hire, retain, manage, and oversee staff.
- Develop program mission, philosophy, and policies regarding program, staff, parents, and community members.
- Identify effective leadership traits, dispositions, roles, and styles.
- Demonstrate effective leadership skills in communication, problem-solving, decision-making, and self-regulation.
- Discuss change theory and identify techniques for creating positive change and ongoing improvement in early childhood programs.
- Apply techniques of establishing and maintaining positive relationships with families, staff, and community.

EDUCATION

AAT in Early Childhood Education/Early Childhood Special Education: 604

The teacher education transfer program AAT comprises a curriculum that provides the first two years of a four-year bachelor's degree and teacher certification. This curriculum prepares students to transfer to an early childhood education program at a four-year college or university in the state of Maryland. The AAT articulates with all Maryland transfer programs in early childhood education. The program enables students to fulfill their general education requirements, participate in fieldwork experiences, and complete a core of professional education coursework appropriate for the first two years of teacher preparation. To earn the AAT students must achieve a minimum of a 2.75 cumulative GPA and present acceptable scores on a state-approved basic skills test.

Please note: EDUC 140 Introduction to Special Education is a requirement of Montgomery College's AAT in early childhood education, but is not sufficient to meet all special education or inclusion course requirements for four-year teacher education programs. Students may be required to take additional special education or inclusion courses as a part of the requirements for a baccalaureate degree and teacher education certification at four-year institutions.

FIRST SEMESTER

BIOL	*101*	*General Biology*	4
EDUC	119	Introduction to Early Childhood Education	3
ENGL	101	Introduction to College Writing*	3
MATH	*130*	*Elements of Mathematics I: Mathematical Reasoning and Number Systems (MATF)*	4
		Health foundation	1

SECOND SEMESTER

ENGL	*102*	*Critical Reading, Writing, and Research (ENGF)*	3
EDUC	135	Child Growth and Development	3
MATH	131	Elements of Mathematics II: Geometry and Algebra	4
PSCI	101	Physical Science I	4
HIST	*200*	*History of the United States: A Survey Course from Colonial Times to 1865*	
		or	
HIST	*201*	*History of the United States: A Survey Course from 1865 to the Present (HUMD)*	3

THIRD SEMESTER

EDUC	136	Curriculum Planning in Early Childhood Education	3
MATH	132	Elements of Mathematics III: Probability, Statistics, and Problem Solving	4
PSCI	102	Physical Science II	4
EDUC	201	Introduction to Special Education	3
PSYC	*102*	*General Psychology (BSSD)*	3

FOURTH SEMESTER

EDUC	243	Processes and Acquisition of Reading	3
GEOG	105	Cultural Geography	
		or	
GEOG	130	Global Geography	3
ISTD	*173*	*Integrated Arts (ARTD)*	3
		Behavioral and social sciences distribution†	3
		Humanities distribution‡	3

TOTAL CREDIT HOURS 64

* ENGL 101, if needed for ENGL 102/103, or general elective.
† Select sociology, anthropology, or political science.
‡ Select ENGL literature course.

(Continued)

EDUCATION

AAT in Early Childhood Education/Early Childhood Special Education: 604 *(continued)*

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Describe the theories and principles of child development and learning and apply the theories and principles to their classroom teaching.
- Identify the policies, issues, trends, and historical events in the field of early childhood education.
- Use systematic observations, documentation, and other effective assessment strategies in a responsible way to positively influence children's learning and development.
- Demonstrate knowledge of supporting and empowering families and communities through respectful, reciprocal relationships.
- Demonstrate understanding of content areas and apply developmentally appropriate approaches to enhance children's learning and development.
- Identify and explain the models of classroom and behavior management.
- Identify strategies for working and advocating for families of culturally and linguistically diverse students and students with disabilities in order to facilitate a child's educational program.
- Analyze and reflect upon teaching practices for the purpose of improving and differentiating instruction for students.
- Identify community resources serving students with special needs and their families.
- Identify and conduct themselves as early childhood professionals who use ethical guidelines and National Association for the Education of Young Children standards related to early childhood practice, and who are advocates for sound educational practices and policies.
- Demonstrate excellent written, verbal, critical thinking, and problem-solving skills, which will allow them to effectively make connections between prior knowledge/experience and new learning.

AAT in Elementary Education/ Elementary Special Education: 601A

The teacher education transfer program AAT has a curriculum that provides the first two years of a four-year bachelor's degree and teacher certification. This curriculum prepares students to transfer to an elementary education or generic special education program at a four-year college or university in the state of Maryland. The AAT articulates with all of the transfer programs in elementary education and generic special education in the state of Maryland. The program enables students to fulfill their general education requirements, participate in fieldwork experiences, and complete a core of professional education coursework appropriate for the first two years of teacher preparation. To earn the AAT students must achieve a minimum of a 2.75 cumulative GPA and present acceptable scores on a state-approved basic skills test.

Please note: EDUC 140 Introduction to Special Education is a requirement of Montgomery College's AAT in early childhood education, but is not sufficient to meet all special education or inclusion course requirements for four-year teacher education programs. Students may be required to take additional special education or inclusion courses as a part of the requirements for a baccalaureate degree and teacher education certification at four-year institutions.

(Continued)

EDUCATION

AAT in Elementary Education/Elementary Special Education: 601A *(continued)*

FIRST SEMESTER

COMM	*108*	*Introduction to Human Communication (SPCF)* 3
EDUC	101	Foundations of Education. 3
EDUC	102	Field Experience in Education 3
ENGL	101	Introduction to College Writing*. 3
HIST	*200*	*History of the United States: A Survey Course from Colonial Times to 1865 or*
HIST	*201*	*History of the United States: A Survey Course from 1865 to the Present (HUMD)*. 3
MATH	*130*	*Elements of Mathematics I: Mathematical Reasoning and Number Systems (MATF)*. 4

SECOND SEMESTER

BIOL	*101*	*General Biology (NSLD)* 4
EDUC	201	Introduction to Special Education. 3
EDUC	202	Field Experience in Special Education .1
ENGL	*102*	*Critical Reading, Writing, and Research (ENGF)*. 3
MATH	131	Elements of Mathematics II: Geometry and Algebra 4
PSYC	*102*	*General Psychology (BSSD)*. 3

THIRD SEMESTER

EDUC	243	Processes and Acquisition of Reading 3
MATH	132	Elements of Mathematics III: Probability, Statistics, and Problem Solving 4
PSCI	*101*	*Physical Science I (NSLD)*. 4
PSYC	203	Human Growth and Development During the Life Span 3
		Humanities distribution† 3

FOURTH SEMESTER

GEOG	*130*	*Global Geography (BSSD)* 3
HLTH	*205*	*Health and Fitness for Teachers* 3
ISTD	*173*	*Integrated Arts (ARTD)*. 3
PSCI	102	Physical Science II 4
PSYC	227	Educational Psychology 3

TOTAL CREDIT HOURS 68

* ENGL 101, if needed for ENGL 102/103, or general elective.
† HIST courses will not satisfy this requirement.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify major historical events in education and analyze the impact of those events with current educational trends.
- Identify the psychological, cognitive, emotional, and physical characteristics of typically developing children and adolescents, with specific consideration to disabilities and cultural and linguistic diversity.
- Analyze and critique current scientifically-based research and culturally responsive instructional practices for the purpose of understanding the educational needs of students and families.
- Identify the current and inclusive philosophies for differentiating instruction to analyze, improve, and facilitate instruction for diverse learners.
- Demonstrate and utilize technology as a teaching/reinforcement tool.
- Develop excellent written, verbal, critical thinking, and problem solving skills, which will allow him or her to effectively make connections between prior knowledge/ experience and new learning.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

EDUCATION

AAT in Teaching Secondary Education—Chemistry: 610

This curriculum prepares students to transfer to a secondary education chemistry program at a four-year college or university in the state of Maryland. The AAT articulates with all Maryland transfer programs in secondary chemistry education. The program enables students to fulfill their General Education requirements, participate in fieldwork experiences, and complete a core of professional education coursework appropriate for the first two years of teacher preparation. To earn the AAT students must achieve a minimum of a 2.75 cumulative GPA and present acceptable scores on a state-approved basic skills test.

FIRST SEMESTER

ENGL	101	Introduction to College Writing*	3
EDUC	101	Foundations of Education	3
EDUC	102	Field Experience in Education	1
MATH	*181*	*Calculus I*	4
CHEM	*131*	*Principles of Chemistry I*	4

SECOND SEMESTER

EDUC	201	Introduction to Special Education	3
EDUC	202	Field Experience in Special Education	1
ENGL	*102*	*Critical Reading, Writing, and Research (ENGF)*	3
CHEM	132	Principles of Chemistry II	4
MATH	182	Calculus II	4
PSYC	*102*	*General Psychology (BSSD)*	3

THIRD SEMESTER

CHEM	203	Organic Chemistry I	5
HIST	*200*	*History of the United States: A Survey Course from Colonial Times to 1865 (HUMD)*	3
PHYS	*161*	*Mechanics and Heat (NSND)*†	3
PSYC	216	Adolescent Psychology	3
		Behavioral and social sciences distribution‡	3

FOURTH SEMESTER

CHEM	204	Organic Chemistry II	5
ISTD	*173*	*Integrated Arts (ARTD)*	3
PHYS	262	Electricity and Magnetism	4
PSYC	227	Educational Psychology	3
		Health foundation	1

TOTAL CREDIT HOURS 63–66

* ENGL 101, only if needed for ENGL 102/103.

† Two semesters of Calculus-based physics (PHYS 161/262) will transfer to all institutions offering chemistry secondary teaching certification except Frostburg State University. Algebra-based physics PHYS 203 and PSYC 204 will also satisfy the Montgomery College AAT requirements; however, these two courses will only transfer to chemistry education programs at Towson University, Hood College, Columbia Union College, Goucher College, or Frostburg State University.

‡ Students must select a BSSD elective from a different discipline than PSYC; course must meet multicultural requirement.

PROGRAM OUTCOMES

Upon completion of this program, the student will be able to:

- Identify major historical events in education and analyze the impact of those events with current educational trends.
- Identify the psychological, cognitive, emotional, and physical characteristics of typically developing children and adolescents, with specific consideration to disabilities and cultural and linguistic diversity.
- Analyze and critique current scientifically-based research and culturally responsive instructional practices for the purpose of understanding the educational needs of students and families.
- Identify the current and inclusive philosophies for differentiating instruction to analyze, improve, and facilitate instruction for diverse learners.
- Demonstrate and utilize technology as a teaching/reinforcement tool.
- Develop excellent written, verbal, critical thinking, and problem solving skills, which will allow him or her to effectively make connections between prior knowledge/ experience and new learning.
- Demonstrate proficiency in the application of chemistry through the level of organic chemistry.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

EDUCATION

AAT in Secondary Education—English: 607

This curriculum prepares students to transfer to any secondary education English program at a four-year college or university in the state of Maryland. The AAT articulates with all Maryland transfer programs in secondary English education. The program enables students to fulfill their General Education requirements, participate in fieldwork experiences, and complete a core of professional education coursework appropriate for the first two years of teacher preparation. To earn the AAT students must achieve a minimum of a 2.75 cumulative GPA and present acceptable scores on a state-approved basic skills test.

FIRST SEMESTER

EDUC	101	Foundations of Education	3
EDUC	102	Field Experiences in Education	1
ENGL	101	Introduction to College Writing*	3
ENGL	110	Principles of English Grammar	3
		Mathematics foundation (any course numbered 110 or higher)	3
PSYC	*102*	*General Psychology (BSSD)*	3

SECOND SEMESTER

COMM	*108*	*Introduction to Human Communications*	3
EDUC	201	Introduction to Special Education	3
EDUC	202	Field Experience in Special Education	1
ENGL	*102*	*Critical Reading, Writing, and Research (ENGF)*	3
ENGL	*140*	*Introduction to Literature (HUMD)*	3
PSYC	216	Adolescent Psychology	3

THIRD SEMESTER

ENGL	201	Introduction to World Literature I *or*	
ENGL	202	Introduction to World Literature II	3
ENGL	212	Survey of American Literature II *or*	
ENGL	213	Survey of British Literature I	3
PSYC	227	Educational Psychology	3
		Health foundation	1-3
		Natural sciences distribution with lab	4

FOURTH SEMESTER

ENGL	208	Women in Literature *or*	
ENGL	214	Survey of British Literature II	3
		Arts distribution†	3
		Arts or humanities distribution‡	3
		*Humanities distribution***	3
		Natural sciences distribution	3-4

TOTAL CREDIT HOURS 61–64

* ENGL 101, if needed for ENGL 102/103, or general elective.
† Recommended course is ISTD 173 Integrated Arts.
‡ Recommended courses are HIST 201 or HIST 202.
** Recommended courses are HIST 225 or HIST 226.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify major historical events in education and analyze the impact of those events with current educational trends.
- Identify the psychological, cognitive, emotional, and physical characteristics of typically developing children and adolescents, with specific consideration to disabilities and cultural and linguistic diversity.
- Analyze and critique current scientifically-based research and culturally responsive instructional practices for the purpose of understanding the educational needs of students and families.
- Identify the current and inclusive philosophies for differentiating instruction to analyze, improve, and facilitate instruction for diverse learners.
- Demonstrate and utilize technology as a teaching/reinforcement tool.
- Develop excellent written, verbal, critical thinking, and problem solving skills, which will allow him or her to effectively make connections between prior knowledge/ experience and new learning.

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

EDUCATION

AAT in Teaching Secondary Education—English: 607 *(continued)*

PROGRAM OUTCOMES ***(continued)***

- Demonstrate an understanding of the structure of the English language, writing strategies for both literary and academic discourse, and literary works from a variety of cultures, historical periods, and genres. Demonstrate an understanding of the English language, including its grammar and mechanics, its structure, and some aspects of its history and development.

AAT in Secondary Education—Mathematics: 605

This curriculum prepares students to transfer to any secondary education mathematics program at a four-year college or university in the state of Maryland. The AAT articulates with all Maryland transfer programs in mathematics education. The program enables students to fulfill their General Education requirements, participate in fieldwork experiences, and complete a core of professional education coursework appropriate for the first two years of teacher preparation. To earn the AAT students must achieve a minimum of a 2.75 cumulative GPA and present acceptable scores on a state-approved basic skills test.

FIRST SEMESTER

EDUC	101	Foundations of Education. 3
EDUC	102	Field Experience in Education 1
ENGL	101	Introduction to College Writing* 3
MATH	*181*	*Calculus I (MATF)* 4
PSYC	*102*	*General Psychology (BSSD)*. 3

SECOND SEMESTER

CHEM	*131*	*Principles of Chemistry I (NSLD)*
		or
PHYS	*161*	*Mechanics and Heat (NSND)* 3-4
CMSC	140	Introduction to Programming 3
EDUC	201	Introduction to Special Education. 3
EDUC	202	Field Experience in Special Education .1
ENGL	*102*	*Critical Reading, Writing, and Research (ENGF)* 3
MATH	182	Calculus II 4

THIRD SEMESTER

CHEM	132	Principles of Chemistry II
		or
PHYS	262	Electricity and Magnetism 4
HIST	*200*	*History of the United States: A Survey Course from Colonial Times to 1865 (HUMD)*. 3
ISTD	*173*	*Integrated Arts (ARTD)*. 3
MATH	117	Elements of Statistics
		or
MATH	282	Differential Equations 3
MATH	280	Multivariable Calculus 4

FOURTH SEMESTER

COMM	*108*	*Introduction to Human Communication (SPCF)* 3
MATH	284	Linear Algebra 4
PSYC	227	Educational Psychology 3
		Behavioral and social sciences distribution 3
		Health foundation 1
		Humanities distribution 3

TOTAL CREDIT HOURS 65–66

* ENGL 101, if needed for ENGL 102/103, or general elective.

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

EDUCATION

AAT in Secondary Education—Mathematics: 605 *(continued)*

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify major historical events in education and analyze the impact of those events with current educational trends.
- Identify the psychological, cognitive, emotional, and physical characteristics of typically developing children and adolescents, with specific consideration to disabilities and cultural and linguistic diversity.
- Analyze and critique current scientifically-based research and culturally responsive instructional practices for the purpose of understanding the educational needs of students and families.
- Identify the current and inclusive philosophies for differentiating instruction to analyze, improve, and facilitate instruction for diverse learners.
- Demonstrate and utilize technology as a teaching/reinforcement tool.
- Develop excellent written, verbal, critical thinking, and problem solving skills, which will allow him or her to effectively make connections between prior knowledge/ experience and new learning.
- Demonstrate proficiency in the application of mathematics through the level of multivariable calculus.

AAT in Secondary Education—Physics: 603

This curriculum prepares students to transfer to a secondary education physics program at a four-year college or university in the state of Maryland. The AAT articulates with all Maryland transfer programs in secondary physics education. The program enables students to fulfill their General Education requirements, participate in fieldwork experiences, and complete a core of professional education coursework appropriate for the first two years of teacher preparation. To earn the AAT, students must achieve a minimum of a 2.75 cumulative GPA and present acceptable scores on a state-approved basic skills test.

FIRST SEMESTER

BIOL	*150*	*Principles of Biology I*	
		or	
CHEM	*131*	*Principles of Chemistry I (NSLD)*	4
EDUC	101	Foundations of Education	3
EDUC	102	Field Experience in Education	1
ENGL	101	Introduction to College Writing*	3
MATH	*181*	*Calculus I (MATF)*	4

SECOND SEMESTER

EDUC	201	Introduction to Special Education	3
EDUC	202	Field Experience in Special Education	1
ENGL	*102*	*Critical Reading, Writing, and Research (ENGF)*	3
MATH	182	Calculus II	4
PHYS	*161*	*Mechanics and Heat (NSND)*	3
PSYC	*102*	*General Psychology (BSSD)*	3

THIRD SEMESTER

HIST	*200*	*History of the United States: A Survey Course from Colonial Times to 1865 (HUMD)*	3
ISTD	*173*	*Integrated Arts (ARTD)*	3
MATH	280	Multivariable Calculus	4
PHYS	262	Electricity and Magnetism	4
PSYC	216	Adolescent Psychology	3

FOURTH SEMESTER

COMM	*108*	*Introduction to Human Communication (SPCF)*	3
PHYS	*263*	*Waves, Optics, and Modern Physics (NSLD)*	4
PSYC	227	Educational Psychology	3
		Behavioral and social sciences distribution	3
		Health foundation	1
		Humanities distribution	3

TOTAL CREDIT HOURS 65–66

(Continued)

* ENGL 101, if needed for ENGL 102/103, or general elective.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

EDUCATION

AAT in Secondary Education—Physics: 603 *(continued)*

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify major historical events in education and analyze the impact of those events with current educational trends.
- Identify the psychological, cognitive, emotional, and physical characteristics of typically developing children and adolescents, with specific consideration to disabilities and cultural and linguistic diversity.
- Analyze and critique current scientifically-based research and culturally responsive instructional practices for the purpose of understanding the educational needs of students and families.
- Identify the current and inclusive philosophies for differentiating instruction to analyze, improve, and facilitate instruction for diverse learners.
- Demonstrate and utilize technology as a teaching/reinforcement tool.
- Develop excellent written, verbal, critical thinking, and problem solving skills, which will allow him or her to effectively make connections between prior knowledge/ experience and new learning.
- Demonstrate proficiency in the application of physics to include mechanics, electricity, wave theory, and modern physics.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

EDUCATION

AAT in Secondary Education—Spanish: 602

This curriculum prepares students to transfer to any secondary education Spanish program at a four-year college or university in the state of Maryland. The AAT articulates with all Maryland transfer programs in teaching Spanish at the secondary level. The program enables students to fulfill their General Education requirements, participate in fieldwork experiences, and complete a core of professional education coursework appropriate for the first two years of teacher preparation. To earn the AAT students must achieve a minimum of a 2.75 cumulative GPA and present acceptable scores on a state-approved basic skills test.

FIRST SEMESTER

EDUC	101	Foundations of Education	3
EDUC	102	Field Experiences in Education	1
ENGL	101	Introduction to College Writing*	3
SPAN	*101*	*Elementary Spanish I (HUMD)*	3
		Mathematics foundation (any course numbered 110 or higher)	3
		Natural sciences distribution with lab	4

SECOND SEMESTER

EDUC	201	Introduction to Special Education	3
EDUC	202	Field Experience in Special Education	1
ENGL	*102*	*Critical Reading, Writing, and Research (ENGF)*	3
HIST	*245*	*Latin American History (HUMD)*	3
PSYC	*102*	*General Psychology (BSSD)*	3
SPAN	102	Elementary Spanish II	3

THIRD SEMESTER

ANTH	*201*	*Introduction to Sociocultural Anthropology (BSSD) [M]*	3
ISTD	*173*	*Integrated Arts (ARTD)*	3
PSYC	216	Adolescent Psychology	3
SPAN	201	Intermediate Spanish I	3
		Natural sciences distribution with lab	4

FOURTH SEMESTER

COMM	*108*	*Introduction to Human Communication (SPCF)*	3
		Health foundation	1
PSYC	227	Educational Psychology	3
SPAN	202	Intermediate Spanish II	3
SPAN	215	Advanced Spanish Conversation and Composition	3
SPAN	216	Advanced Reading in Spanish: Introduction to Latin American Literature	3

TOTAL CREDIT HOURS 65

* ENGL 101, if needed for ENGL 102/103, or general elective and SPAN 101, if needed.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify major historical events in education and analyze the impact of those events with current educational trends.
- Identify the psychological, cognitive, emotional, and physical characteristics of typically developing children and adolescents, with specific consideration to disabilities and cultural and linguistic diversity.
- Analyze and critique current scientifically-based research and culturally responsive instructional practices for the purpose of understanding the educational needs of students and families.
- Identify the current and inclusive philosophies for differentiating instruction to analyze, improve, and facilitate instruction for diverse learners.
- Demonstrate and utilize technology as a teaching/reinforcement tool.
- Develop excellent written, verbal, critical thinking, and problem solving skills, which will allow him or her to effectively make connections between prior knowledge/experience and new learning.
- Demonstrate proficiency in the Spanish language through the level of Intermediate II, including spoken and written language, composition, and Latin American literature.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

EMERGENCY PREPAREDNESS MANAGEMENT

Emergency Preparedness Management AAS (R,TP/SS): 414

The emergency preparedness management program is designed to provide students with a broad education in emergency management. The program focuses on a multidisciplinary approach to preparedness and the skills needed to organize and lead emergency management operations, and prepares students to perform in a disaster by providing the necessary skills for mitigation, preparedness, response, and recovery. The curriculum is designed to provide students with a foundation of technical and professional knowledge needed for emergency services delivery in the fields of public service—including law enforcement, fire service, and emergency medical services, along with students wishing to study in this field for careers in emergency management.

FIRST SEMESTER

EMGT	101	Principles of Emergency Management	3
EMGT	103	Emergency Response and Recovery	3
ENGL	101	Introduction to College Writing*	3
PSYC	*102*	*General Psychology (BSSD)*	3
		CMAP or CMSC elective	3

SECOND SEMESTER

EMGT	104	Incident Management System and EOC Interface	3
EMGT	200	Emergency Planning	3
		English foundation	3
		Mathematics foundation	3
		Speech foundation	3

THIRD SEMESTER

EMGT	105	Hazard Mitigation and Preparedness.	3
EMGT	106	Technology in Emergency Management	3
		Arts distribution	3
		Behavioral and social sciences distribution (other than psychology) CCJS 110 or POLI 101 recommended	3
		Natural sciences distribution with lab	4

FOURTH SEMESTER

EMGT	240	Leadership in Emergency Management	3
HLTH	*220*	*Emergency Medical Responder (HLHF)*	3
		Humanities distribution (200 level history)	3
		Natural sciences distribution with lab	4
		EMGT elective (must be at 200 level)	3

TOTAL CREDITS HOURS 62

* ENGL 101, if needed, for ENGL 102/103 or general elective.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Develop and evaluate an emergency operations plan based on data provided on a hypothetical jurisdiction.
- Determine hazards and develop risk assessment programs in local communities.
- Develop and implement short and long term recovery concepts into all areas of the community, using an all hazard approach.
- Analyze organizational behavior problems as they apply to emergency operations.
- Analyze the roles, responsibilities, and authorities of the various organizations responding to hazardous materials incidents.
- Demonstrate knowledge of the activities that should happen in each phase of a disaster.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

EMERGENCY PREPAREDNESS MANAGEMENT

Emergency Preparedness Management Certificate (R, TP/SS): 249

The certificate in emergency preparedness management provides students with the technical and professional knowledge to prepare for a career in emergency management. Courses provide introductory through advanced training in the skills necessary to succeed as a professional in this field.

PROGRAM REQUIREMENTS

EMGT	101	Principles of Emergency Management	3
EMGT	103	Emergency Response and Recovery	3
EMGT	104	Incident Management System and EOC Interface	3
EMGT	105	Hazard Mitigation and Preparedness	3
EMGT	106	Technology in Emergency Management	3
EMGT	200	Emergency Planning	3
EMGT	205	Public Health in Emergency Management	3
EMGT	240	Leadership in Emergency Management	3
HLTH	220	Emergency Medical Responder	3

ELECTIVES (SELECT ONE COURSE)

EMGT	201	Critical Incident and Disaster Stress Management for Emergency Responders	3
EMGT	202	Terrorism and Emergency Management	3
EMGT	203	Resource Management — Managing Volunteers and Donations	3
EMGT	204	Emergency Management Public Education Programs	3
EMGT	220	Introduction to Homeland Security	3

TOTAL CREDITS HOURS 30

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Develop and evaluate an emergency operations plan based on data provided on a hypothetical jurisdiction.
- Determine hazards and develop risk assessment programs in local communities.
- Deliver emergency management public education programs to target populations.
- Develop and implement short and long term recovery concepts into all areas of the community, using an all hazard approach.
- Analyze organizational behavior problems as they apply to emergency operations.
- Analyze the roles, responsibilities, and authorities of the various organizations responding to hazardous materials incidents.
- Demonstrate knowledge of the activities that should happen in each phase of a disaster.
- Demonstrate understanding of knowledge, skills, and abilities necessary to understand emergency management as a field of research and practice.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ENGINEERING SCIENCE

This curriculum is designed to provide the first two years of a four-year program leading to the award of a BS in engineering. A student planning to transfer to any baccalaureate degree granting institution should follow the appropriate track listed below in consultation with an engineering advisor. The student should also visit the Montgomery College Engineering Advising website *www.montgomerycollege.edu/engineeringadvising* for up-to-date comprehensive information on transfer requirements for all universities and colleges with which we have an articulated transfer program.

Completion of all requirements for any track in engineering science will lead to the award of the AS in engineering science.

Aerospace Engineering: 408

Engineering Science AS

This track will prepare students to transfer to a four-year university with a major in aerospace engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the aerospace engineering program at the University of Maryland, College Park. A suggested course sequence for full-time students follows; all students should consult an engineering adviser. The student should also visit the Montgomery College Engineering Advising website at www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information.

FIRST SEMESTER

CHEM	135	General Chemistry for Engineers	4
ENGL	*102*	*Critical Reading, Writing, and Research (ENGF)*	*3*
ENES	100	Introduction to Engineering Design	3
MATH	*181*	*Calculus I (MATF)*	*4*
		Health foundation	1

SECOND SEMESTER

ENES	102	Statics	3
MATH	182	Calculus II	4
PHYS	*161*	*General Physics I (NSND)*	*3*
		Behavioral and social sciences distribution	3
		Humanities distribution	3

THIRD SEMESTER

ENES	220	Mechanics of Materials	3
MATH	280	Multivariable Calculus	4
PHYS	*262*	*General Physics II (NSLD)*	*4*
		Arts distribution	3

FOURTH SEMESTER

ENES	232	Thermodynamics	3
MATH	282	Differential Equations	3
MATH	284	Linear Algebra	4
PHYS	*263*	*General Physics III (NSLD)*	*4*
		Behavioral and social sciences distribution	3

TOTAL CREDIT HOURS 62

ADVISING NOTES

- Most engineering students will start at MC missing one or more prerequisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, and MATH 181.
- The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
- The prerequisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
- The corequisite for ENES 100 is MATH 180 or higher.
- The prerequisite for MATH 181 is MATH 180 (Precalculus). Mathematics initial course placement will be determined by the Accuplacer Math Test, AP/IB credit, or transfer credits.
- UMCP's ENAE 200 (1) and 283 (3) for which MC has no equivalents, remain to be taken at UMCP. Students need to take ENAE 283 in order to achieve full junior standing upon transfer. This must be done in summer term prior to fall term transfer.
- CMSC 140 (3) and ENES 240 (3) combined can be equivalent to ENAE 202 (3).

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ENGINEERING SCIENCE

Aerospace Engineering: 408 *(continued)*

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify, formulate, and solve basic physics and engineering problems in mechanics and thermodynamics.
- Design simple mechanisms and structures using analytical and numerical methods in the area of aerospace engineering.
- Use appropriate computer programming and application software in aerospace engineering.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ENGINEERING SCIENCE

Bioengineering: 411A
Engineering Science AS

This track will prepare students to transfer to a four-year university with a major in bioengineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the bioengineering program at the University of Maryland, College Park. A suggested course sequence for full-time students follows; all students should consult an engineering adviser. The student should also visit the Montgomery College Engineering Advising website at *www.montgomerycollege.edu/engineeringadvising* for up-to-date comprehensive information.

FIRST SEMESTER

CHEM	*132*	*Principles of Chemistry II (NSLD)*	*4*
ENGL	*102*	*Techniques of Reading and Writing II (ENGF)*†	3
ENES	100	Introduction to Engineering Design	3
MATH	*181*	*Calculus I (MATF)*	4
		Health foundation	1

SECOND SEMESTER

ENES	102	Statics	3
ENES	120	Biology for Engineers	3
MATH	182	Calculus II	4
PHYS	*161*	*General Physics I (NSND)*	3
		Behavioral and social science distribution	3

THIRD SEMESTER

CHEM	203	Organic Chemistry I	5
MATH	280	Multivariable Calculus	4
PHYS	*262*	*General Physics II (NSLD)*	4
		Behavioral and social sciences distribution	3

FOURTH SEMESTER

ENES	220	Mechanics of Materials	3
ENES	232	Thermodynamics	3
MATH	282	Differential Equations	3
		Arts distribution	3
		Humanities distribution	3

TOTAL CREDIT HOURS 62

ADVISING NOTES

- Most engineering students will start at MC missing one or more prerequisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, and MATH 181.
- The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
- The prerequisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
- The corequisite for ENES 100 is MATH 180 or higher.
- The prerequisite for MATH 181 is MATH 180 (Precalculus). Mathematics initial course placement will be determined by the Accuplacer Math Test, AP/IB credit, or transfer credits.
- ENES 120 (3) is a gateway course for transfer to the bioengineering program at UMCP. BIOE 121 (1) lab will remain to be taken at UMCP.
- BIOE 121, 241, 371; and BSCI 330 for which MC has no equivalents, must be completedafter transfer or through MTAP at UMCP.

PROGRAM OUTCOMES:

Upon completion of this program a student will be able to:

- Identify, formulate, and solve basic physics-based, biology problems in biomechanics and biochemistry.
- Demonstrate conceptual understanding of the connections between engineering and life sciences in the context of bioengineering applications.
- Use appropriate computer application software in bioengineering.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ENGINEERING SCIENCE

Chemical Engineering: 406

Engineering Science AS

This track will prepare students to transfer to a four-year university with a major in chemical engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the chemical engineering program at the University of Maryland, College Park. A suggested course sequence for full-time students follows; all students should consult an engineering adviser. The student should also visit the Montgomery College Engineering Advising website at *www.montgomerycollege.edu/engineeringadvising* for up-to-date comprehensive information.

FIRST SEMESTER

CHEM	*132*	*Principles of Chemistry II (NSLD)*	4
ENGL	*102*	*Techniques of Reading and Writing II (ENGF)*	3
ENES	100	Introduction to Engineering Design	3
MATH	*181*	*Calculus I*	4
		Health foundation	1

SECOND SEMESTER

ENES	120	Biology for Engineers	3
MATH	182	Calculus II	4
PHYS	*161*	*General Physics (NSND)*	3
		Art distribution	3
		Humanities distribution	3

THIRD SEMESTER

CHEM	203	Organic Chemistry I	5
MATH	280	Multivariable Calculus	4
PHYS	*262*	*General Physics II (NSLD)*	4
		Behavioral and social sciences distribution	3

FOURTH SEMESTER

CHEM	204	Organic Chemistry II	5
MATH	282	Differential Equations	3
PHYS	*263*	*General Physics III (NSLD)*	4
		Behavioral and social sciences distribution	3

TOTAL CREDIT HOURS 62

ADVISING NOTES

- Most engineering students will start at MC missing one or more prerequisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, and MATH 181.
- The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
- The prerequisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
- The corequisite for ENES 100 is MATH 180 or higher.
- The prerequisite for MATH 181 is MATH 180 (Precalculus). Mathematics initial course placement will be determined by the Accuplacer Math Test, AP/IB credit, or transfer credits.
- UMCP's courses CHBE 101, 250, 301, and 302 are courses for which MC has no equivalents. CHBE 101, 250, and 301 must be completed for junior standing at UMCP.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify, formulate, and solve basic physics and organic chemistry problems.
- Analyze and design simple chemical processes.
- Use appropriate computer applications software in chemical engineering.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ENGINEERING SCIENCE

Civil Engineering: 407

Engineering Science AS

This track will prepare students to transfer to a four-year university with a major in civil engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the civil engineering program at the University of Maryland, College Park. A suggested course sequence for full-time students follows; all students should consult an engineering adviser. The student should also visit the Montgomery College Engineering Advising website at *www.montgomerycollege.edu/engineeringadvising* for up-to-date comprehensive information.

FIRST SEMESTER

CHEM	135	General Chemistry for Engineers (NSLD)	4
ENGL	*102*	*Techniques of Reading and Writing II (ENGF)*	3
ENES	100	Introduction to Engineering Design	3
MATH	*181*	*Calculus I (MATF)*	4
		Health foundation	1

SECOND SEMESTER

MATH	182	Calculus II	4
PHYS	*161*	*General Physics I*	3
ENES	102	Statics	3
		Arts distribution	3
		Humanities distribution	3

THIRD SEMESTER

MATH	280	Multivariable Calculus	4
PHYS	*262*	*General Physics II (NSLD)*	4
ENES	220	Mechanics of Materials	3
		Behavioral and social sciences distribution	3

FOURTH SEMESTER

MATH	282	Differential Equations	3
PHYS	*263*	*General Physics III other NSLD‡*	4
ENES	240	Scientific and Engineering Computation	3
ENEE	221	Dynamics	3
		Behavioral and social sciences distribution	3

TOTAL CREDIT HOURS 61

ADVISING NOTES

- Most engineering students will start at MC missing one or more pre-requisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, and MATH 181.
- The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
- The pre-requisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
- The co-requisite for ENES 100 is MATH 180 or higher.
- The pre-requisite for MATH 181 is MATH 180 (Precalculus). Mathematics initial course placement will be determined by the Accuplacer Math Test, AP/IB credit, or transfer credits.
- UMCP's ENCE 100, 200, 215, 305 for which MC has no equivalents, must be completed after transfer or through MTAP.
- ENES 221 is only required for Geotechnical/Structures Track at UMCP. Students pursuing Environmental/Water Resources Track or Transportation Track at UMCP may opt to take BIOL 105, BIOL 108, or GEOL 101 to fulfill the non-major science requirement.
- BIOL 105/BIOL 106, BIOL 108, OR GEOL 101 may be more appropriate than PHYS 263 depending on your transfer institution.
- NOTE: MC now offers ENES 120 Biology for Engineers (3) in the fall semester. This will transfer as equivalent to BIOE 120 for students who will pursue the B.S. Civil Engineering Environmental/Water Resources Track at UMCP.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify, formulate, and solve basic physics and engineering problems in structural mechanics.
- Analyze and design simple structures using analytical and numerical methods in the area of civil engineering.
- Use appropriate computer programming and applications software in civil engineering.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ENGINEERING SCIENCE

Computer Engineering: 409

Engineering Science AS

This track will prepare students to transfer to a four-year university with a major in computer engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the computer engineering program at the University of Maryland, Baltimore County. A suggested course sequence for full-time students follows; all students should consult an engineering adviser. The student should also visit the Montgomery College Engineering Advising website at www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information.

FIRST SEMESTER

CHEM	135	General Chemistry for Engineers (NSLD)	4
ENGL	*102*	*Critical Reading, Writing and Research*	3
ENES	100	Introduction to Engineering Design	3
MATH	*181*	*Calculus I (MATF)*	4
		Health foundation	1

SECOND SEMESTER

CMSC	203	Computer Science I	4
MATH	182	Calculus II	4
PHYS	*161*	*General Physics I (NSND)*	3
		Arts distribution	3
		Behavioral and social sciences distribution	3

THIRD SEMESTER

CMSC	204	Computer Science II	4
ENEE	244	Digital Logic Design	3
MATH	282	Differential Equations	3
PHYS	*262*	*General Physics (NSLD)*	4
		Humanities distribution	3

FOURTH SEMESTER

CMSC	207	Introduction to Discrete Structures	4
		Behavioral and social sciences distribution	3
ENEE	207	Electric Circuits	4
ENEE	222	Elements of Discrete Signal Analysis	4
ENEE	245	Digital Circuits and Systems Laboratory	2

TOTAL CREDIT HOURS 66

ADVISING NOTES

- Most engineering students will start at MC missing one or more pre-requisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, MATH 181, or CMSC 203.
- The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
- The pre-requisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
- The co-requisite for ENES 100 is MATH 180 or higher.
- The pre-requisite for MATH 181 is MATH 180 (Precalculus). Mathematics initial course placement will be determined by the Accuplacer Math Test, AP/IB credit, or transfer credits.
- The pre-requisites for CMSC 203 are MATH 181 and CMSC 140 or consent of instructor if you have structured programming experience.
- MC courses CMSC 203 and CMSC 204 do not transfer to UMCP as equivalent to CMSC 131 and CMSC 132. Students planning to transfer to UMCP may take an assessment test to place out of these courses or take these courses through MTAP prior to transfer.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify, formulate, and solve basic physics and engineering problems in programming and digital circuits.
- Design simple systems using computing theory and numerical methods in the area of Computer Engineering.
- Use appropriate computer application software in computer engineering.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ENGINEERING SCIENCE

Electrical Engineering: 402

Engineering Science AS

This track will prepare students to transfer to a four-year university with a major in electrical engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the electrical engineering program at the University of Maryland, College Park. A suggested course sequence for full-time students follows; all students should consult an engineering adviser. The student should also visit the Montgomery College Engineering Advising website at *www.montgomerycollege.edu/engineeringadvising* for up-to-date comprehensive information.

FIRST SEMESTER

CHEM	135	General Chemistry for Engineers (NSLD)	4
ENEE	140	Introduction to Programming Concepts for Engineers	2
ENGL	*102*	*Critical Reading, Writing and Research*	3
ENES	100	Introduction to Engineering Design	3
MATH	*181*	*Calculus I (MATF)*	4

SECOND SEMESTER

ENEE	150	Intermediate Programming Concepts for Engineers	3
ENEE	244	Digital Logic Design	3
MATH	182	Calculus II	4
PHYS	*161*	*General Physics I (NSND)*	3
		Behavioral and social sciences distribution	3
		Health foundation	1

THIRD SEMESTER

ENEE	222	Elements of Discrete Signal Analysis	4
MATH	280	Multivariable Calculus	4
PHYS	*262*	*General Physics II (NSLD)*	4
		Arts distribution	3
		Humanities distribution	3

FOURTH SEMESTER

ENEE	207	Electric Circuits	4
ENEE	245	Digital Circuits and Systems Laboratory	2
MATH	282	Differential Equations	3
PHYS	*263*	*General Physics III (NSLD)*	4
		Behavioral and social sciences distribution	3

TOTAL CREDIT HOURS 67

ADVISING NOTES:

- Most engineering students will start at MC missing one or more pre-requisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, MATH 181, or ENEE 150.
- The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
- The pre-requisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
- The co-requisite for ENES 100 is MATH 180 or higher.
- The pre-requisite for MATH 181 is MATH 180 (Precalculus). Mathematics initial course placement will be determined by the Accuplacer Math Test, AP/IB credit, or transfer credits.
- The pre-requisites for ENEE 150 are MATH 181 and ENEE 140 or consent of instructor if you have structured programming experience.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify, formulate, and solve basic physics and engineering problems in analog and digital circuits.
- Design simple systems and circuits using analytical and numerical methods in the area of Electrical Engineering.
- Use appropriate computer application software in electrical engineering.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ENGINEERING SCIENCE

Fire Protection Engineering: 403

Engineering Science AS

This track will prepare students to transfer to a four-year university with a major in fire protection engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the fire protection engineering program at the University of Maryland, College Park. A suggested course sequence for full-time students follows; all students should consult an engineering adviser. The student should also visit the Montgomery College Engineering Advising website at *www.montgomerycollege.edu/engineeringadvising* for up-to-date comprehensive information.

FIRST SEMESTER

CHEM	135	General Chemistry for Engineers	4
ENGL	*102*	*Critical Reading, Writing and Research*	3
ENES	100	Introduction to Engineering Design	3
MATH	*181*	*Calculus I (MATF)*	4
		Health foundation	1

SECOND SEMESTER

ENES	102	Statics	3
MATH	182	Calculus II	4
PHYS	*161*	*General Physics I (NSND)*	3
		Behavioral and social sciences distribution	3
		Humanities distribution	3

THIRD SEMESTER

ENES	220	Mechanics of Materials	3
ENES	221	Dynamics	3
MATH	280	Multivariable Calculus	4
PHYS	*262*	*General Physics II (NSLD)*	4
		Behavioral and social sciences distribution	3

FOURTH SEMESTER

ENES	232	Thermodynamics	
		or	
ENES	240	Scientific and Engineering Computation	3
MATH	282	Differential Equations	3
PHYS	*263*	*General Physics III (NSLD)*	4
		Arts distribution	3

TOTAL CREDIT HOURS 61

ADVISING NOTES

- Most engineering students will start at MC missing one or more pre-requisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, and MATH 181.
- The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
- The pre-requisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
- The co-requisite for ENES 100 is MATH 180 or higher.
- The pre-requisite for MATH 181 is MATH 180 (Precalculus). Mathematics initial course placement will be determined by the Accuplacer Math Test, AP/IB credit, or transfer credits.
- UMCP's ENFP 250(3) and 255(3), for which MC has no equivalents, remain to be taken at UMCP after transfer.
- ENES 240 (Engineering Computation) or ENES 232 (thermodynamics) IS NOT required for transfer, but is transferable as equivalent to other technical elective courses in the junior year.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify, formulate, and solve basic physics and engineering problems in mechanics and thermodynamics.
- Design simple structures and strategies using analytic and numerical methods in the area of fire protection engineering.
- Use appropriate computer application software in fire protection engineering.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ENGINEERING SCIENCE

Materials Science and Engineering: 413

Engineering Science AS

This track will prepare students to transfer to a four-year university with a major in materials science and engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the materials science and engineering program at the University of Maryland, College Park. A suggested course sequence for full-time students follows; all students should consult an engineering adviser. The student should also visit the Montgomery College Engineering Advising website at *www.montgomerycollege.edu/engineeringadvising* for up-to-date comprehensive information.

FIRST SEMESTER

CHEM	135	General Chemistry for Engineers	4
ENGL	*102*	*Critical Reading, Writing and Research (ENGF)*	3
ENES	100	Introduction to Engineering Design	3
MATH	*181*	*Calculus I (MATF)*	4
		Health foundation	1

SECOND SEMESTER

ENES	102	Statics	3
MATH	182	Calculus II	4
PHYS	*161*	*General Physics I (NSND)*	3
		Behavioral and social sciences distribution	3
		Humanities distribution	3

THIRD SEMESTER

MATH	280	Multivariable Calculus	4
PHYS	*262*	*General Physics II (NSLD)*	4
CHEM	203	Organic Chemistry I	5
		Behavioral and social sciences distribution	3

FOURTH SEMESTER

ENEE	207	Electric Circuits	4
ENES	220	Mechanics of Material	3
		Arts distribution	3
MATH	282	Differential Equations	3
PHYS	*263*	*General Physics III (NSLD)*	4

TOTAL CREDIT HOURS 64

ADVISING NOTES:

- Most engineering students will start at MC missing one or more pre-requisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, and MATH 181.
- The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
- The pre-requisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
- The co-requisite for ENES 100 is MATH 180 or higher.
- The pre-requisite for MATH 181 is MATH 180 (Precalculus). Mathematics initial course placement will be determined by the Accuplacer Math Test, AP/IB credit, or transfer credits
- UMCP's ENMA 300 and ENMA 301, for which MC has no equivalents, must be completed after transfer or through MTAP.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify, formulate, and solve basic physics and engineering problems in mechanics and nuclear physics.
- Identify properties of various materials and their applications.
- Use appropriate computer application software in material engineering.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ENGINEERING SCIENCE

Mechanical Engineering: 404

Engineering Science AS

This track will prepare students to transfer to a four-year university with a major in mechanical engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the mechanical engineering program at the University of Maryland, College Park. A suggested course sequence for full-time students follows; all students should consult an engineering adviser. The student should also visit the Montgomery College Engineering Advising website at *www.montgomerycollege.edu/engineeringadvising* for up-to-date comprehensive information.

FIRST SEMESTER

CHEM	135	General Chemistry for Engineers	4
ENGL	*102*	*Critical Reading, Writing and Research (ENGF)*	3
ENES	100	Introduction to Engineering Design	3
MATH	*181*	*Calculus I (MATF)*	4
		Health foundation	1

SECOND SEMESTER

ENES	102	Statics	3
MATH	182	Calculus II	4
PHYS	*161*	*General Physics I (NSND)*	3
		Behavioral and social sciences distribution	3
		Humanities distribution	3

THIRD SEMESTER

ENES	221	Dynamics	3
MATH	280	Multivariable Calculus	4
PHYS	*262*	*General Physics II (NSLD)*	4
		Behavioral and social sciences distribution	3

FOURTH SEMESTER

ENES	220	Mechanics of Materials	3
ENES	232	Thermodynamics	3
MATH	282	Differential Equations	3
PHYS	*263*	*General Physics III (NSLD)*	4
		Arts distribution	3

TOTAL CREDIT HOURS 61

ADVISING NOTES:

- Most engineering students will start at MC missing one or more pre-requisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, and MATH 181.
- The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
- The pre-requisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
- The co-requisite for ENES 100 is MATH 180 or higher.
- The pre-requisite for MATH 181 is MATH 180 (Precalculus). Mathematics initial course placement will be determined by the Accuplacer Math Test, AP/IB credit, or transfer credits.
- ENES 240 (3) IS NOT required for the MC AS Mechanical Engineering degree, but is accepted as an equivalent to MATH 206 (1) and ENES 272 (2) at UMCP.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify, formulate, and solve basic physics and engineering problems in mechanics and energy system.
- Analyze and design simple mechanical system using analytical method(s).
- Use appropriate computer application software in mechanical engineering.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ENGINEERING SCIENCE

Nuclear Engineering: 405

Engineering Science AS

This track will prepare students to transfer to a four-year university with a major in nuclear engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below. A suggested course sequence for full-time students follows; all students should consult an engineering adviser. The student should also visit the Montgomery College Engineering Advising website at *www.montgomerycollege.edu/engineeringadvising* for up-to-date comprehensive information.

FIRST SEMESTER

CHEM	135	General Chemistry for Engineers	4
ENGL	*102*	*Critical Reading, Writing and Research*	3
ENES	100	Introduction to Engineering Design	3
MATH	*181*	*Calculus I (MATF)*	4
		Health foundation	1

SECOND SEMESTER

ENES	102	Statics	3
MATH	182	Calculus II	4
PHYS	*161*	*General Physics I (NSND)*	3
		Behavioral and social sciences distribution	3
		Humanities distribution	3

THIRD SEMESTER

ENEE	140	Introduction to Programming Concepts for Engineers	2
ENES	221	Dynamics	3
MATH	280	Multivariable Calculus	4
PHYS	*262*	*General Physics II (NSLD)*	4
		Arts distribution	3

FOURTH SEMESTER

ENES	232	Thermodynamics	3
ENES	240	Scientific and Engineering Computation	3
MATH	282	Differential Equations	3
PHYS	*263*	*General Physics III (NSLD)*	4
		Behavioral and social sciences distribution	3

TOTAL CREDIT HOURS 63

ADVISING NOTES:

- Most engineering students will start at MC missing one or more pre-requisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, and MATH 181.
- The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
- The pre-requisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
- The co-requisite for ENES 100 is MATH 180 or higher.
- The pre-requisite for MATH 181 is MATH 180 (Precalculus). Mathematics initial course placement will be determined by the Accuplacer Math Test, AP/IB credit, or transfer credits.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify, formulate, and solve basic physics and engineering problems in mechanics and thermodynamics.
- Design simple systems and reactors using analytical and numerical methods in the area of nuclear engineering.
- Use of appropriate computer application software in nuclear engineering.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ENGINEERING SCIENCE

General Engineering: 410

Engineering Science AS

This track will prepare students to transfer to a four-year university with a major in general engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below. A suggested course sequence for full-time students follows; all students should consult an engineering adviser. The student should also visit the Montgomery College Engineering Advising website at *www.montgomerycollege.edu/engineeringadvising* for up-to-date comprehensive information.

FIRST SEMESTER

CHEM	*101*	*Principles of Chemistry I (NSLD)*	4
ENGL	101	Introduction to College Writing	3
ENES	100	Introduction to Engineering Design	3
MATH	*181*	*Calculus I (MATF)*	4
		Humanities distribution	3

SECOND SEMESTER

		ENEE or ENES electives	3
ENGL	*102*	*Critical Reading, Writing and Research (ENGF)*	3
MATH	182	Calculus II	4
PHYS	*161*	*General Physics I (NSND)*	3
		Behavioral and social sciences distribution	3

THIRD SEMESTER

MATH	280	Multivariable Calculus	4
PHYS	*262*	*General Physics II (NSLD)*	4
		ENEE or ENES electives	3
		Health foundation	1
		Behavioral and social sciences distribution	3

FOURTH SEMESTER

		ENEE or ENES or science electives+	6
MATH	282	Differential Equations	3
PHYS	*263*	*General Physics III (NSLD) or elective*	4
		Arts distribution	3

TOTAL CREDIT HOURS 64

ADVISING NOTES:

- Most engineering students will start at MC missing one or more pre-requisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, and MATH 181.
- The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
- The pre-requisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
- The co-requisite for ENES 100 is MATH 180 or higher.
- The pre-requisite for MATH 181 is MATH 180 (Precalculus). Mathematics initial course placement will be determined by the Accuplacer Math Test, AP/IB credit, or transfer credits.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify, formulate, and solve basic physics and engineering problems in the areas they choose their elective coursework
- Make basic designs of systems in their area of choice using analytical and numerical methods
- Use appropriate computer application software in engineering.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ETHNIC SOCIAL STUDIES

Ethnic Social Studies Certificate: 241

This course of study emphasizes interdisciplinary knowledge about the role of ethnicity in its national and global contexts. The curriculum provides students with the tools to critically analyze the history and politics of race and ethnicity within U.S. society; the formation of cultural knowledge; and the study of power, community, and social justice from an inter-ethnic perspective.

ANTH	201	Introduction to Sociocultural Anthropology	3
HIST	240	Civil Rights in America	3
SOCY	233	Race and Ethnic Relations	3
Electives: Select three from the following seven courses from two separate disciplines:			
HIST	235	The History of African Americans to 1865	3
HIST	236	The History of African Americans Since 1865	3
HIST	209	History of Asian Americans	3
HIST	211	History of Latinos in the United States	3
POLI	230	Introduction to International Conflict Resolution	3
POLI	252	Race and Ethnicity in U.S. Politics	3
SOCY	250	Globalization Issues	3

TOTAL CREDIT HOURS 18

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify and explicate the differences between ethnic groups and the creation and maintenance of ethnic group identities.
- Describe and explain the relationship tensions of ethnic groups within the context of a larger society.
- Identify issues related to the migrant/transnational experience within the U.S. and a global context.
- Apply newly found internalized understanding of these issues to a diverse work situation.
- Challenge stereotypes and promote an understanding of the heterogeneous, complex and fluid nature of ethnic identities.
- Enhance communication with different ethnic groups in the work place and in the community at large.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

ETHNIC SOCIAL STUDIES

Ethnic Social Studies Letter of Recognition: 816

This sequence of three courses is designed for people who wish to develop skills or knowledge in ethnic social studies. In order to complete each course in this sequence, students need to demonstrate skills or knowledge in specific areas. These areas include interdisciplinary knowledge about ethnic groups and relations in U.S. society and in global contexts; the history and politics of race and ethnicity within U.S. society; cultural knowledge; and an understanding of and sensitivity toward ethnic relations regarding power, community, and social justice. A grade of C or better is required in each course in the sequence.

ANTH 201 Introduction to Sociocultural Anthropology 3
HIST 240 Civil Rights in America 3
SOCY 233 Race and Ethnic Relations 3

TOTAL CREDIT HOURS 9

Upon successful completion of this course of study, and application to the Admissions and Records Office, the letter of recognition in etnic studies will be issued by the chief enrollment services and financial aid officer.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify and explicate the differences between ethnic groups and the creation and maintenance of ethnic group identities.
- Describe and explain the relationship tensions of ethnic groups within the context of a larger society.
- Challenge stereotypes and promote an understanding of the heterogeneous, complex and fluid nature of ethnic identities.
- Enhance communication with different ethnic groups in the work place and in the community at large.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

FIRE SCIENCE AND EMERGENCY SERVICES

Fire and Emergency Services Management AAS (R,TP/SS): 346A

Statewide Program

This curriculum is designed to provide individuals with the principles, theory, and practices associated with state-of-the-art fire science and management, including issues related to tactical fire operations, fire safety, firefighting and emergency services leadership and management, and community fire issues.

Students expand their thinking beyond fire-specific issues in areas related to firefighting through coursework in human resource management, administration, homeland security and emergency/disaster management, fire protection services, safety and prevention, and investigation.

This curriculum is designed to meet the needs of professional and volunteer fire service personnel and those seeking employment in the fire and emergency services.

FIRST SEMESTER

ENGL	101	Introduction to College Writing*	3
FIRE	101	Principles of Emergency Services	3
FIRE	102	Fire Behavior and Combustion	3
FIRE	103	Building Construction for Fire Protection	3
PSYC	*102*	*General Psychology (BSSD)*	3

SECOND SEMESTER

FIRE	104	Principles of Emergency Services Safety and Survival	3
FIRE	105	Fire Prevention	3
FIRE	201	Fire Protection Systems	3
		English foundation	3
		Mathematics foundation	3
		Speech foundation	3

THIRD SEMESTER

FIRE	202	Fire Protection Hydraulics and Water Supply	3
		Arts or humanities distribution (two different disciplines)	3
		Natural sciences distribution with lab	4
		Behavioral and social sciences distribution (other than psychology)	3
		CMAP or CMSC elective	3

FOURTH SEMESTER

FIRE	203	Fire and Emergency Services Administration	3
		Arts or humanities distribution (two different disciplines)	3
		Health foundation	1-3
		Natural sciences distribution	3
		Fire science elective (200 level)	3

TOTAL CREDIT HOURS 62–65

* ENGL 101 if needed for ENGL 102/103 or general elective.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate understanding of building construction and associated fire codes.
- Apply and discuss water supply management for fire protection systems and fire scene use.
- Apply chemistry, mathematics, and physics to solve fire protection problems.
- Discuss and apply the characteristics of hazardous materials to ensure safe handling, transporting, and storage as well as deal effectively with spills and fires involving these materials.
- Identify and differentiate the various forms of fire, their fundamental scientific principles, and their associated mitigation and response strategies.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

FIRE SCIENCE AND EMERGENCY SERVICES

Fire and Emergency Services Management Certificate (R, TP/SS): 240

This curriculum is designed to provide individuals with the principles, theory, and practices associated with state-of-the-art fire science and management, including issues related to tactical fire operations, fire safety, firefighting and emergency services leadership and management, and community fire issues.

Students expand their thinking beyond fire-specific issues in areas related to firefighting through coursework in human resource management, administration, homeland security and emergency/disaster management, fire protection services, safety and prevention, and investigation.

This curriculum is designed to meet the needs of professional and volunteer fire service personnel and those seeking employment in the fire and emergency services.

ENGL	101	Introduction to College Writing	3
ENGL	102	Critical Reading, Writing and Research	
		or	
ENGL	103	Critical Reading, Writing and Research in the Workplace	3
		Speech foundation	3
		CMAP elective or CMSC elective	3
FIRE	101	Principles of Emergency Services	3
FIRE	102	Fire Behavior and Combustion	3
FIRE	103	Building Construction for Fire Protection	3
FIRE	104	Principles of Fire and Emergency Services Safety and Survival	3
FIRE	105	Fire Prevention	3
FIRE	201	Fire Protection Systems	3
FIRE	202	Fire Protection Hydraulics and Water Supply	3
FIRE	203	Fire and Emergency Services Administration	3
PSYC	102	General Psychology	3

TOTAL CREDIT HOURS 39

PROGRAM OUTCOMES:

Upon completion the student will be able to:

- Describe inspections, corrections of fire hazards, and fire investigations.
- Apply proper procedures for storage, handling, transportation, and fire control involving hazardous materials.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

FIRE SCIENCE AND EMERGENCY SERVICES

Fire and Arson Investigation Certificate (R): 180

Statewide Program

This certificate provides students with the technical and professional knowledge to prepare for a career in fire and arson investigation. Part detective, scientist, engineer, and law enforcer, the investigator represents the many different facets of both fire science and criminal justice. An arson investigator tries to determine who is responsible for setting a fire; a fire investigator attempts to determine the cause and origin of a fire. This certificate curriculum has been designed to be compatible with industry standards and prepares the student for the challenges he or she may face in investigations and court settings.

CCJS	110	Administration of Justice	3
CCJS	211	Criminal Investigation	3
CCJS	222	Criminal Evidence	3
CCJS	232	Criminal Forensics	3
ENGL	101	Introduction to College Writing	3
ENGL	102	Critical Reading, Writing and Research	
		or	
ENGL	103	Critical Reading, Writing and Research in the Workplace	3
FIRE	101	Principles of Emergency Services	3
FIRE	103	Building Construction for Fire Protection	3
FIRE	225	Fire Investigation I	3
FIRE	226	Fire Investigation II	3
PSYC	102	General Psychology	3
PSYC	213	Criminal and Legal Psychology	
		or	
PSYC	221	Introduction to Abnormal Psychology	3

TOTAL CREDIT HOURS 36

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate understanding of building construction and associated fire codes.
- Describe inspections, corrections of fire hazards, and fire investigations.
- Investigate a fire to determine point of origin and cause of the fire.
- Identify and differentiate the various forms of fire, their fundamental scientific principles, and their associated mitigation and response strategies.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

FIRE SCIENCE AND EMERGENCY SERVICES

Emergency Medical Technician—Basic Letter of Recognition (R, TP/SS): 811

This course is for people who wish to pursue careers in emergency medical services. The course provides students with the skills to assess and treat sick or injured patients and prepares students to take the Maryland state certification examination. A grade of C or better is required.

FIRE 150 Emergency Medical Technician—Basic 7 **TOTAL CREDIT HOURS 7**

Upon successful completion of this course of study, and application to the Admissions and Records Office, the letter of recognition in Emergency Medical Technician will be issued by the chief enrollment services and financial aid officer.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Recognize the nature and seriousness of the patient's condition or extent of injuries to assess requirements for emergency medical care.
- Administer appropriate emergency medical care based on assessment findings of the patient's condition and apply appropriate treatment protocols.
- Lift, move, position, and otherwise handle the patient to minimize discomfort and prevent further injury.
- Use critical thinking skills to confidently and effectively manage emergency situations.
- Practice professional standards by demonstrating a strong work ethic and a positive attitude, having respect for patients, the ability to work cooperatively as a health care team member, and willingness to maintain and enhance technical skills.
- Communicate clearly and professionally using verbal and nonverbal communication techniques.
- Apply safety and infection control practices to maintain personal and professional well-being and to ensure patient safety.
- Manage emergency patient care and treatment appropriately within the scope of practice for an emergency medical technician (EMT)—basic.
- Apply legal knowledge and medical ethics to all patient care situations by documenting accurate and complete patient records and reports and maintaining patient confidentiality.
- Demonstrate an understanding of the EMS system: how it is accessed, levels of training, and roles and responsibilities of an emergency care provider.
- Perform at a minimum the following EMT-Basic skills: basic patient assessment techniques, controlling airways through adjuncts, administering CPR and operating the automatic external defibrillator, bandage patients' injuries, immobilizing the spine, provide oxygen therapy, administering basic medications, assisting with emergency childbirth.
- Use oral and written skills to communicate effectively in anxiety-producing situations with patients, families, and members of the health care team.
- Apply professional values and ethical behaviors individually and as a member of a team in providing emergency care.
- Understand the overall roles and responsibilities of the EMT in performing both emergency medical care and operational aspects of the job.
- Develop skills in patient evaluation and all emergency treatment procedures as required by Maryland state protocols.
- Develop skill in the use and maintenance of all equipment and instruments required to accomplish the job as an EMT.
- Demonstrate knowledge of anatomy, physiology, and pathophysiology, and of the mechanics of injury for patient evaluation for the sick and injured.
- Meet requirements for Maryland EMT—Basic certification exam.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

FIRE SCIENCE AND EMERGENCY SERVICES

Fire Prevention Technology AAS (R,TP/SS): 321

Statewide Program

The major in fire prevention technology offers students the opportunity to develop the professional skills and knowledge necessary to serve as an effective leader and manager in the public safety environment. The program is built around a "core" of courses that focus on broad knowledge and principles. Fire prevention specialists inspect buildings and equipment to detect fire hazards and enforce state and local regulations; develop and coordinate fire prevention programs; identify corrective actions necessary to bring properties into compliance with applicable fire codes, laws, regulations, and standards, and explain these measures to property owners or their representatives; inspect and test fire protection and/or fire detection systems to verify that such systems are installed in accordance with appropriate laws, codes, ordinances, regulations, and standards; and write detailed reports of fire inspections performed, fire code violations observed, and corrective recommendations offered.

Developed in conjunction with the National Fire Academy of the Federal Emergency Management Agency, the program covers the various aspects of the profession, provides content knowledge, and improves employment opportunities in the field, as well as prepares students for entry-level management responsibilities and increases technical knowledge necessary for diverse public and private leadership situations.

FIRST SEMESTER

ENGL	101	Introduction to College Writing*	3
FIRE	101	Principles of Emergency Services	3
FIRE	102	Fire Behavior and Combustion	3
FIRE	103	Building Construction for Fire Protection	3
PSYC	*102*	*General Psychology (BSSD)*	3

SECOND SEMESTER

FIRE	105	Fire Prevention	3
FIRE	201	Fire Protection Systems	3
FIRE	221	Principles of Code Enforcement	3
		English foundation	3
		Mathematics foundation	3

THIRD SEMESTER

FIRE	202	Fire Protection Hydraulics and Water Supply	3
FIRE	222	Fire Plans Review	3
FIRE	225	Fire Investigation I	3
		Natural sciences distribution with lab	4
		Speech foundation	3

FOURTH SEMESTER

FIRE	226	Fire Investigation II	3
FIRE	228	Occupational Safety and Health for Emergency Services	3
FIRE	250	Fire Protection Internship	3
		Arts or humanities distribution	3
		Health foundation	1-3
		CMAP or CMSC elective	3

TOTAL CREDIT HOURS 62–64

* ENGL 101 if needed for ENGL 102/103 or general elective.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Describe basic principles of fire cause determination as they relate to fire prevention and investigation.
- Identify operational deficiencies in sprinkler systems and special hazard fixed fire protection systems.
- Conduct risk reduction inspections through employing hazard identification, interpreting and applying codes and standards, and applying hazard abatement process.
- Conduct, coordinate, and complete basic fire cause and origin investigation and participate, under supervision, in the investigation of complex fire situations.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

FIRE SCIENCE AND EMERGENCY SERVICES

Fire Prevention Technology Certificate (R,TP/SS): 247

Statewide Program

The major in fire prevention technology offers students the opportunity to develop the professional skills and knowledge necessary to serve as an effective leader and manager in the public safety environment. The program is built around a "core" of courses that focus on broad knowledge and principles. Fire prevention specialists inspect buildings and equipment to detect fire hazards and enforce state and local regulations; develop and coordinate fire prevention programs; identify corrective actions necessary to bring properties into compliance with applicable fire codes, laws, regulations, and standards; explain these measures to property owners or their representatives; inspect and test fire protection and/or fire detection systems to verify that such systems are installed in accordance with appropriate laws, codes, ordinances, regulations, and standards; and write detailed reports of fire inspections performed, fire code violations observed, and corrective recommendations offered.

Developed in conjunction with the National Fire Academy of the Federal Emergency Management Agency, the program covers the various aspects of the profession, provides content knowledge, and improves employment opportunities in the field, as well as prepares students for entry-level management responsibilities and increases technical knowledge necessary for diverse public and private leadership situations.

FIRE	101	Principles of Emergency Services	3
FIRE	102	Fire Behavior and Combustion	3
FIRE	103	Building Construction for Fire Protection	3
FIRE	105	Fire Prevention	3
FIRE	201	Fire Protection Systems	3
FIRE	202	Fire Protection Hydraulics & Water Supply	3
FIRE	221	Principles of Code Enforcement	3
FIRE	222	Fire Plans Review	3
FIRE	225	Fire Investigation I	3
FIRE	226	Fire Investigation II	3
FIRE	228	Occupational Safety and Health for Emergency Services	3
FIRE	250	Fire Protection Internship	3

TOTAL CREDIT HOURS 36

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Describe basic principles of fire cause determination as they relate to fire prevention and investigation.
- Identify operational deficiencies in sprinkler systems and special hazard fixed fire protection systems.
- Identify the relationship between fire safety education and fire prevention.
- Utilize a knowledge of building construction principles, fire protection systems, and fire prevention codes to affect safer occupancies.
- Conduct risk reduction inspections through employing hazard identification, interpreting and applying codes and standards, and applying hazard abatement process.
- Conduct, coordinate, and complete basic fire cause and origin investigation and participate, under supervision, in the investigation of complex fire situations.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

FIRE SCIENCE AND EMERGENCY SERVICES

Fire Protection Technology AAS (R, TP/SS): 322

Statewide Program

This program prepares students to meet the unique demands of the profession through education and training on national standards from the National Fire Protection Association and the National Fire Academy. Designed to correlate classroom, laboratory, and field experience in public and private sector fire organizations, this program provides a diverse yet relevant variety of courses. In this program, students will determine fire protection methods and design or recommend materials or equipment such as structural components or fire detection equipment to assist organizations in safeguarding life and property against fire, explosion, and related hazards.

Developed in conjunction with the National Fire Academy of the Federal Emergency Management Agency, the program covers the various aspects of the profession, provides content knowledge, and improves employment opportunities in the field, as well as prepares students for entry-level management responsibilities and increases technical knowledge necessary for diverse public and private leadership situations.

FIRST SEMESTER

ENGL	101	Introduction to College Writing*	3
FIRE	102	Fire Behavior and Combustion	3
FIRE	103	Building Construction for Fire Protection	3
FIRE	202	Fire Protection Hydraulics and Water Supply	3
PSYC	*102*	*General Psychology (BSSD)*	3
		Health foundation	1-3

SECOND SEMESTER

FIRE	120	Design Concepts for Fire Protection	3
FIRE	201	Fire Protection Systems	3
FIRE	221	Principles of Code Enforcement	3
		English foundation	3
		Mathematics foundation	3

THIRD SEMESTER

FIRE	222	Fire Plans Review	3
FIRE	231	Automatic Sprinkler Systems Design I	3
FIRE	232	Automatic Sprinkler Systems Design II	3
		Speech foundation	3
		Natural sciences distribution with lab	4

FOURTH SEMESTER

FIRE	241	Fire Alarm Systems Design I	3
FIRE	242	Fire Alarm Systems Design II	3
FIRE	250	Fire Protection Internship	3
		Arts or humanities distribution	3
		CMAP or CMSC elective	3

TOTAL CREDIT HOURS 62–64

* ENGL 101 if needed for ENGL 102/103 or general elective

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Provide an in-depth analysis of the principles of fire control through the utilization of personnel, equipment and extinguishing agents.
- Apply theoretical knowledge of hydraulic principles to solving water supply problems for fire protection.
- Utilize a knowledge of building construction principles, fire protection systems, and fire prevention codes to affect safer occupancies.
- Design fire protection systems.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

FIRE SCIENCE AND EMERGENCY SERVICES

Fire Protection Technology Certificate: 248 (R, TP/SS)

Statewide Program

This program prepares students to meet the unique demands of the profession through education and training on national standards from the National Fire Protection Association and the National Fire Academy. Designed to correlate classroom, laboratory, and field experience in public and private sector fire organizations, this program provides a diverse yet relevant variety of courses. In this program, students will determine fire protection methods and design or recommend materials or equipment such as structural components or fire detection equipment to assist organizations in safeguarding life and property against fire, explosion, and related hazards.

Developed in conjunction with the National Fire Academy of the Federal Emergency Management Agency, the program covers the various aspects of the profession, provides content knowledge, and improves employment opportunities in the field, as well as prepares students for entry-level management responsibilities and increases technical knowledge necessary for diverse public and private leadership situations.

FIRE	102	Fire Behavior and Combustion	3
FIRE	103	Building Construction for Fire Protection	3
FIRE	120	Design Concepts for Fire Protection	3
FIRE	201	Principles of Code Enforcement	3
FIRE	202	Fire Protection Hydraulics & Water Supply	3
FIRE	201	Fire Protection Systems	3
FIRE	222	Fire Plans Review	3
FIRE	231	Automatic Sprinkler Systems Design I	3
FIRE	232	Automatic Sprinkler Systems Design II	3
FIRE	241	Fire Alarm Systems Design I	3
FIRE	242	Fire Alarm Systems Design II	3
FIRE	250	Fire Protection Internship	3

TOTAL CREDIT HOURS 36

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Provide an in-depth analysis of the principles of fire control through the utilization of personnel, equipment, and extinguishing agents.
- Apply theoretical knowledge of hydraulic principles to solving water supply problems for fire protection.
- Utilize a knowledge of building construction principles, fire protection systems, and fire prevention codes to affect safer occupancies.
- Produce fire protection drawings.
- Design fire protection systems.
- Use construction blueprints.
- Evaluate automatic sprinkler systems and fire protection hazards.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

GENERAL STUDIES

General Studies AA: 129

This curriculum is designed for students who need maximum academic flexibility to meet requirements for transfer or career exploration, or to meet other personal goals. Transferability and applicability of this program depend on courses selected and the transfer program and institution, personal goal, or career selected.

This curriculum contains general education courses and general electives. General education courses are required by all Maryland public state and local institutions. Additional courses in speech and health are Montgomery College requirements. These courses generally transfer as major or elective courses. General electives are to be used to meet individual goals. Students are required to take at least 15 credits of 200 level courses. It is strongly recommended that students work closely with an adviser or counselor to create an individualized plan of study.

To identify appropriate courses for transfer, students should seek assistance from a counselor or adviser, consult the transfer institution, use ARTSYS (transfer information maintained by the University of Maryland System for Maryland community college students at *http://artweb.usmd.edu),* visit Montgomery College's transfer information site at *www.montgomerycollege.edu/transfer*, visit a campus Career/Transfer Center, or consult the Montgomery College Transfer Manual. Students may also facilitate their career exploration by enrolling in STSU 103 Career Development: Dynamics and Application.

GENERAL EDUCATION REQUIREMENTS

Foundation Courses

English foundation 3
*Health foundation** 1–3
Mathematics foundation 3
Speech foundation 3

Distribution Courses

Arts distribution 3
Arts or humanities distribution 3
Behavioral and social sciences distribution† 3
Behavioral and social sciences distribution† 3
Humanities distribution 3
Natural sciences distribution with lab 4
Natural sciences distribution 3–4

PROGRAM REQUIREMENTS

ENGL 101 Introduction to College Writing‡ 3
Health or Physical Education elective** 1

ELECTIVES (SELECT 24 CREDIT HOURS)‡

Select courses appropriate for major, transfer (transfer information), career exploration, or your personal goals in consultation with a counselor/adviser.

TOTAL CREDIT HOURS 60–61

* Two or three semester hours of health may be substituted for the health foundation and physical education elective.
† The two behavioral and social sciences courses must be in different disciplines.
‡ ENGL 101 if needed for ENGL 102/103 or general elective.
Note: Students must complete a minimum of 15 credits at the 200 course level for completion of the program.
** Only two credits of physical education courses numbered 101–199 may be used as electives.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate general education competencies.
- Describe a connection between elective choices and their personal, occupational, or academic goals.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

GEOGRAPHY

See Applied Geography

GRAPHIC DESIGN

See also Computer Gaming and Simulation and Web Careers

The Graphic Design program offers one degree (two tracks) and two certificates. Tracks: (1) Graphic Design AAS, (2) Illustration AAS. Certificates: (1) Computer graphics: art and animation.

Appropriate courses may be used toward development of marketable skills, for vocational interests, or for possible transfer. A student interested in any of the AAS or certificate curricula should consult an academic adviser in the Department of Communication Arts Technologies.

Graphic Design (R): 304A

Graphic Design AAS

The graphic design track prepares the student for employment in the field of graphic communication. Emphasis is placed on the creative application of design principles and the solution of problems in graphic design and communication, using both traditional and digital tools.

FIRST SEMESTER

ARTT	*100*	*Introduction to Drawing (ARTD)*	3
ARTT	103	Design Studio: 2-Dimensional	3
ENGL	101	Introduction to College Writing*	3
GDES	116	Digital Tools for the Visual Arts	4
GDES	121	Fundamentals of Graphic Design I	3

SECOND SEMESTER

ARTT	201	Art History: 1400 to Present	3
GDES	124	Fundamentals of Graphic Design II	3
GDES	127	Graphic Design Workflow	3
		English foundation	3
		Mathematics foundation	3

THIRD SEMESTER

GDES	212	Publication Design with InDesign	
		or	
GDES	218	Graphic Design for the Web	4
GDES	214	Photoshop for Graphics and Photography	4
		Behavioral and social sciences distribution	3
		Health foundation	1
		Speech foundation	3

FOURTH SEMESTER

GDES	216	Illustrator for Vector Graphics	4
GDES	224	Graphic Design III	3
TVRA	140	Video Editing	3
		Natural sciences distribution with lab	4

TOTAL CREDIT HOURS 60

* ENGL 101, if needed for ENGL 102/103, or GDES elective.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate solid foundation skills and competency in a range of media, techniques, and knowledge of associated processes.
- Demonstrate visual problem solving that employs appropriate technical skills and techniques.
- Evaluate the creativity of ideas and concepts of designed graphics.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

GRAPHIC DESIGN

Graphic Design: 902A

AFA Statewide Program (School of Art + Design)

Students who plan to major in graphic design in the School of Art + Design will be assigned the temporary major code of 902A until they are officially admitted to the program. Students may take preparatory courses and courses that fulfill General Education requirements during the waiting period.

This track is studio intensive, with two-thirds of the total credit hours in studio art and graphic design courses, and one-third of the total credit hours in general education courses. The program will prepare students for transfer to a four-year institution to pursue a bachelor of fine arts degree.

All students should meet with their adviser to plan their program of study as well as their transfer and career goals. For more information on the School of Art + Design, see page 70.

The Maryland Higher Education Commission designates some community college programs as statewide programs. A student may enroll in any of these programs at the same rates as in-county residents if his or her particular program is not offered by the local community college or if the student cannot enroll due to an enrollment limit. For more information on statewide programs, please see page 93 of the 2014-2015 print catalog.

FIRST SEMESTER

ARTT	*100*	*Introduction to Drawing (ARTD)*	.3
ARTT	102	Design Studio: 2-Dimensional	.3
ARTT	116	Digital Tools for the Visual Arts	.4
ARTT	200	Art History: Ancient to 1400	.3
ENGL	101	Introduction to College Writing*	.3

SECOND SEMESTER

ARTT	103	Design Studio: 3-Dimensional	.3
ARTT	204	Intermediate Drawing	
		or	
ARTT	205	Figure Drawing I	.3
ARTT	201	Art History: 1400 to Present	.3
		Mathematics foundation	3-4
ENGL	*102*	*Critical Reading, Writing, and Research (ENGF)*	.3

THIRD SEMESTER

ARTT	152	Photographic Expression	
		or	
		Printmaking elective†	.3
ARTT	263	Professional Practice for the Visual Artist	.1
GDES	210	Graphic Design I	.3
GDES	220	Typography I	.3
		Humanities distribution	.3
		Craft elective‡	.3

FOURTH SEMESTER

GDES	211	Graphic Design II	.3
GDES	221	Typography II	.3
		Behavioral and social sciences distribution	.3
		Natural sciences distribution with lab	.4
		ARTT elective	.4

TOTAL CREDIT HOURS ~~64–65~~

* ENGL 101, if needed, for ENGL 102/103 or art elective.
† Select ARTT 152, ARTT 225, ARTT 227, ARTT 228, ARTT 230, ARTT 233, or ARTT 236.
‡ Select ARTT 120, ARTT 123, ARTT 245, or ARTT 247.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate visual problem solving capability.
- Utilize foundational skills and demonstrate competency in a range of art media and techniques.
- Demonstrate comprehension of art and graphic design within an historical and contemporary context.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

GRAPHIC DESIGN

Computer Graphics: Art and Animation Certificate (R): 175

This certificate curriculum emphasizes the aesthetic knowledge and technical skills necessary to produce effective computer graphics and animation. Upon completing the curriculum, students may enter the commercial job market, apply this certificate toward a degree in computer graphics at another institution, or advance with their artistic careers.

ARTT	100	Introduction to Drawing	3
ARTT	102	Design Studio: 2-Dimensional	3
GDES	120	Introduction to Digital Arts	4
CMAP	125	Introduction to Flash	4
GDES	140	Introduction to Animation	4
GDES	240	Animation 2: 3-D Modeling	4
TVRA	101	Video Editing for Broadcast	4
		Electives*	3–4
		TOTAL CREDIT HOURS	**30–31**

* Select 3–4 credit hours from the following list of electives: ARTT 105, ARTT 211, ARTT 215, ARTT 230, ARCH 183, GDES 116, GDES 121, GDES 124, GDES 134, GDES 214, GDES 216, GDES 224, HONR 251, and PHOT 214. GDES 224 has prerequisites that may be waived at the department's discretion. It is suggested that those certificate candidates who wish to pursue a career in graphics for publication take GDES 116 and GDES 214 as electives.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate the knowledge of and the ability to use various software programs to produce competent digital still images and animations that adhere to formal artistic criteria.
- Demonstrate the ability to recognize and use various input and output devices as they are applied to digital still images and animations.
- Demonstrate basic knowledge of various hardware platforms as they apply to the creation of digital still images and animations.
- Demonstrate the knowledge of and the ability to employ creatively the elements and principles of design within a fine art composition.
- Demonstrate the knowledge of and the ability to use basic color theory in the creation of a digital still image and animation.
- Demonstrate the ability to write a script and prepare a storyboard for two- and three-dimensional animations with audio.
- Demonstrate the ability to analyze and critique contemporary and historical fine art compositions, graphic images, and animations both verbally and in writing.
- Demonstrate a basic understanding of art history as it applies to still and moving images.
- Develop organized work habits.
- Develop a portfolio representing the highest quality work that they have produced using the media studied, including digital still images and two- and three-dimensional animations.

GRAPHIC DESIGN

Graphic Design with Digital Tools Certificate (R): 239

See also Web Careers

This certificate curriculum prepares the student for immediate employment in graphic design using the computer in today's digital art and design studio. Courses are designed to provide introductory to advanced training in the skills necessary to succeed as a professional in this industry.

PROGRAM REQUIREMENTS

GDES	116	Digital Tools for the Visual Arts	4
GDES	212	Publication Design with InDesign	4
GDES	214	Photoshop for Graphics and Photography	4
GDES	216	Illustrator for Vector Graphics	4
GDES	218	Graphic Design for the Web	4
TVRA	140	Video Editing	3

ELECTIVES (SELECT 6-8 CREDITS)*

ARTT	100	Introduction to Drawing	3
ARTT	102	Design Studio: 2-Dimensional	3
CMAP	125	Introduction to Flash	4
CMAP	272	Professional Website Development	4
GDES	121	Fundamentals of Graphic Design I	3
GDES	124	Fundamentals of Graphic Design II	3
GDES	230	Advanced Image Editing and Correction	4
PHOT	161	Introduction to Digital Photography	3

TOTAL CREDIT HOURS 29–31

* Students with no graphic design background should select GDES 121 and GDES 124 to complete their electives.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate the ability to express ideas and concepts creatively.
- Demonstrate visual problem solving that employs digital technical skills and techniques.
- Demonstrate currency in the digital tools employed in graphic design.
- Apply principles of design and typography to web and print media design.
- Demonstrate technical mastery of the digital tools employed in graphic design.
- Demonstrate the ability to use the vocabulary of design.
- Develop a portfolio representative of the material and techniques studied, suitable for employment or professional advancement.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

GRAPHIC DESIGN

Illustration (R): 305

Graphic Design AAS

This track prepares the student for employment as an illustrator. Subject interpretation, communication, and technical skills, both traditional and digital, are stressed in the preparation of the student's portfolio.

FIRST SEMESTER

ARTT	*100*	*Introduction to Drawing (ARTD)*	.3
ENGL	101	Introduction to College Writing*	.3
GDES	116	Digital Tools for the Visual Arts	
		or	
GDES	120	Introduction to Digital Arts	.4
GDES	121	Fundamentals of Graphic Design I	.3
GDES	134	Illustration I	.3

SECOND SEMESTER

ARTT	103	Design Studio: 2-Dimensional	.3
ARTT	200	Art History: Ancient to 1400	.3
GDES	135	Illustration II	.3
		English foundation	.3
		Mathematics foundation	.3

THIRD SEMESTER

ARTT	201	Art History: 1400 to Present	.3
ARTT	205	Figure Drawing I	.3
GDES	136	Digital Illustration	.3
		Behavioral and social sciences distribution	.3
		Health foundation	.1
		Speech foundation	.3

FOURTH SEMESTER

ARTT	211	Painting I	.3
GDES	216	Illustrator for Vector Graphics	.4
GDES	234	Illustration III	.3
		Natural sciences distribution with lab	.4

TOTAL CREDIT HOURS 61

* ENGL 101, if needed for ENGL 102/103, or any GDES elective.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate solid foundation skills and competency in a range of media, techniques, and knowledge of associated processes.
- Demonstrate visual problem solving that employs appropriate technical skills and techniques.
- Express ideas and concepts creatively.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

HEALTH ENHANCEMENT/EXERCISE SCI/PHYS ED

Health Fitness AA (R): 157B

This AA track is designed for the student who wishes to pursue a career in health promotion, fitness, or corporate wellness. An analysis of job markets in fields related to health promotion shows that they are experiencing rapid growth expansion as our society continues to become more aware of the benefits of a healthy lifestyle. This track has been designed as a transfer program, including a program developed in conjunction with Salisbury University's exercise science degree. This associates degree program is also appropriate for students interested in pursuing a baccalaureate degree in exercise science, health promotion, health education, or kinesiology from another college or university.

Students will acquire knowledge and skills and will develop the abilities to apply theoretical information in practical real-life situations. Emphasis is on an understanding of the human body, health behavior, personal health, lifetime fitness principles and training techniques, nutrition, weight control, stress management, and other related healthy lifestyle topics. Students will learn to assess the different components of health and fitness, and they will acquire skills in the design, implementation, and supervision of healthier lifestyle programs for groups and individuals. Students will also acquire the program assessment and evaluation skills needed for the successful implementation of health behavior change programming.

Completion of the AA requirements in health fitness will prepare students for fitness certifications through nationally recognized professional organizations such as the American Council on Exercise. Upon completion of designated courses, students will be eligible to sit for various NCCA approved certifications for a reduced fee. Upon completion of the Salisbury University degree, students will be eligible to sit for a variety of CoAES professional certifications including Certified Health Educator Specialist certification, ACSM's Health Fitness Specialist certification, or NCSA's Certified Strength and Conditioning Specialist.

FIRST SEMESTER

BIOL	*150*	*Principles of Biology I (NSLD)*	4
ENGL	101	Introduction to College Writing*	3
HLTH	*220*	*Emergency Medical Responder (HLHF)*	3
PHED	206	Principles and Practices of Health Fitness	3
		Arts distribution	3

SECOND SEMESTER

HLTH	225	Introduction to Health Behaviors	3
MATH	*117*	*Elements of Statistics*	
		or	
MATH	*163*	*Precalculus (MATF)*	3
PHED	228	Group Fitness Instructor Training	3
		English foundation	3
		Humanities distribution	3

THIRD SEMESTER

BIOL	*212*	*Human Anatomy and Physiology I (NSLD)*	4
PHED	230	Advanced Weight Training: Theory and Design	3
PHED	237	Advanced Metabolic Assessment and Program Design	3
		Arts or humanities distribution	3
		Behavioral and social sciences distribution†	3

FOURTH SEMESTER

BIOL	213	Anatomy and Physiology II	4
PHED	250	Prevention and Management of Exercise Injury	3
		Behavioral and social sciences distribution†	3
		Speech foundation	3

TOTAL CREDIT HOURS 60

* ENGL 101 if needed for ENGL 102/103 or Health elective.

† The two behavioral and social sciences courses must be in different disciplines. Students participating in the articulated curriculum with Salisbury University - Shady Grove need an additional 9 health credits and PHED 140 (1 credit). Students must check with departmental advisers for appropriate courses.

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

HEALTH ENHANCEMENT/EXERCISE SCI/PHYS ED

Health Fitness AA (R): 157B *(continued)*

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Define health and describe the dimensions of wellness and a healthy lifestyle while demonstrating the impact of individual health related behaviors on health status.
- Demonstrate knowledge of anatomy, physiology, and biomechanics as it relates to health and exercise programming.
- Describe and utilize current theories of health behavior to facilitate behavior change and program adherence.
- Demonstrate knowledge of the principles of exercise science and the skills necessary to administer appropriate fitness assessments and use the results to design a comprehensive health fitness program.
- Demonstrate knowledge of health fitness instructor's responsibilities, limitations, and the legal complications.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

HEALTH ENHANCEMENT/EXERCISE SCI/PHYS ED

Health Education (R): 186

Arts and Sciences AA

This AA track prepares students to enter a diverse, people-oriented field in which professionals work to promote lifestyle wellness and improve the health status of society. Health educators assist people in making responsible decisions and changing behaviors to achieve a healthier lifestyle.

Professionals in this fast-growing field are employed by public and private health care organizations, government agencies, hospital wellness centers, corporate-based worksite health programs, college and university health service centers, insurance companies, private health promotion corporations, drug and alcohol rehabilitation programs, family planning agencies, and health clinics, and as education representatives for textbook publishers and pharmaceutical companies. Graduates with school health degrees teach on the elementary, secondary, and college levels, in both private and public school settings. School health educators also qualify to work in many community and governmental agencies. Job titles include patient educators, health program managers, health education teachers, community health organizers, health promotion directors, and wellness coordinators.

FIRST SEMESTER

BIOL	*150*	*Principles of Biology I (NSLD)*	4
ENGL	101	Introduction to College Writing*	3
HLTH	*105*	*Personal and Community Health*	3
SOCY	*100*	*Introduction to Sociology (BSSD)*	3
		Mathematics foundation	3

SECOND SEMESTER

ENGL	*102*	*Critical Reading, Writing, and Research (ENGF)*	3
CHEM	*109/109L*	*Chemistry and Society/Chemistry and Society Laboratory†*	
		or	
CHEM	*131*	*Principles of Chemistry I (NSLD)*	4
HLTH	160	The Science and Theory of Health	3
PSYC	*102*	*General Psychology (BSSD)*	3
		Speech foundation	3

THIRD SEMESTER

BIOL	212	Human Anatomy and Physiology I	4
HLTH	225	Introduction to Health Behaviors	3
		Arts distribution	3
		Health electives (at least three health elective credits must be at the 200 level)	5-6

FOURTH SEMESTER

BIOL	213	Human Anatomy and Physiology II	4
		Humanities distribution	3
		Arts or humanities distribution	3
		Health electives (at least three health elective credits must be at the 200 level)‡	3

TOTAL CREDIT HOURS 60–61

* Students who qualify for a waiver of ENGL 101 may select three credits of electives with approval of the department.

† If CHEM 109 is selected, both CHEM 109 and CHEM 109L must be taken. Since chemistry requirements vary widely please check with your transfer institution of Artsys.

‡ Students must consult with departmental adviser before selecting electives from HLTH or other categories. Select electives from HLTH 113, HLTH 121, HLTH 125, HLTH 131, HLTH 150, HLTH 170, HLTH 200, HLTH 212, HLTH 215, HLTH 220 and HLTH 230. At least three health elective credits must be at the 200-level.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Describe biological, psychological, environmental, and social factors that influence health.
- Explain the impact of individual behavior on health status.
- Define health education and list the skills/competencies of the entry level health educator.
- Develop a health education intervention based on the assessment of controllable and noncontrollable risk factors that impact health.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

HEALTH ENHANCEMENT/EXERCISE SCI/PHYS ED

Advanced Personal Trainer Certificate (R): 191B

The personal trainer certificate curriculum is designed to develop fitness specialists who are knowledgeable and skilled in fitness, wellness instruction, and program design. The curriculum blends science and theory with practical application and hands-on experience.

Students will acquire an academic foundation in the fundamental principles of exercise and nutrition in addition to a basic understanding of human anatomy and physiology. Practical skill training will focus on the development of expertise in fitness assessment, health and fitness program design, safe exercise technique, training methodology, injury prevention and care, behavior change, exercise leadership, and personal training business practice.

The certificate curriculum offers the educational framework and competencies for career opportunities in the fitness industry. Successful completion of the certificate will prepare students for many of the nationally recognized personal training certification examinations and provides a course foundation for those interested in pursuing an AA in exercise science/health fitness specialist.

HLTH	108	Nutrition for Fitness and Wellness 3	PHED	230	Advanced Weight Training: Theory and Program Design 3
HLTH	220	Emergency Medical Responder 3	PHED	237	Advanced Metabolic Assessment and Program Designs 3
PHED	206	Principles and Practices of Health-Related Fitness 3	PHED	240	Personal Training Techniques 3
PHED	228	Group Exercise Leadership 3			

TOTAL CREDIT HOURS 21

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate knowledge and use of cardiovascular, respiratory, metabolic, and musculoskeletal risk factors and appropriate use of health histories, physician referrals, and informed consent.
- Demonstrate knowledge and use of appropriate fitness assessments for the following fitness components, cardiorespiratory, strength, flexibility, and body composition.
- Demonstrate knowledge and use of appropriate exercise program development for the following fitness components, cardiorespiratory, strength, flexibility, and body composition.
- Demonstrate knowledge and use of specific behavioral strategies to enhance exercise and health behavior change.
- Demonstrate knowledge and use of ability to communicate effectively and teach exercise participants proper exercise techniques, exercise progression, and lifestyle change.

HEALTH ENHANCEMENT/EXERCISE SCI/PHYS ED

Aging Studies Letter of Recognition: 822

This sequence of three courses is designed to introduce students to the field of gerontology, to help generate further interest in studying the aging process, and to assist those working in the field to demonstrate knowledge in key areas. A grade of C or above is required for each course in the sequence.

HLTH 170 Introduction to Aging. 3
HLTH 230 Health in the Later Years 3
SOCY 240 Sociology of Age and Aging. 3

TOTAL CREDIT HOURS 9

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Evaluate the impact and relevance of psychological, economic, demographic, and political issues on the health of the aging population.
- Describe the role of acute disease, chronic disease, and accidents as barriers to health and longevity.
- Examine the process of age socialization in social institutions including family, education, work, law, and media.
- Demonstrate an understanding of the intersection of age, gender, social class, and race/ethnicity.
- Distinguish between age-associated and age-related changes in body systems.

Personal Trainer Examination Preparation Letter of Recognition (R): 821

This letter of recognition is designed to prepare individuals interested in working in the fitness industry to successfully pass national personal training certifications such as ACE's Personal Trainer certification. Students will acquire the basic knowledge and skills to apply theoretical fitness information in practical real-life situations. Emphasis is on an understanding of the human body, lifetime fitness principles and training techniques, nutrition, weight control, and other related healthy lifestyle topics. Students will learn to assess the different components of health and fitness, and they will acquire skills in the design, implementation, and supervision of healthier lifestyle programs for healthy individuals. A grade of "C" or better is required in each course. This certification is designed so that individuals can complete this certification in one semester.

HLTH 113 First Aid & CPR 2
HLTH 121 Nutrition for Fitness & Wellness 3
PHED 166 Personal Fitness I 1
PHED 206 Principles and Practices of Health-Related Fitness 3

TOTAL CREDIT HOURS 9

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

Personal Trainer Examination Preparation Letter of Recognition (R): 821 *(continued)*

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Define health and describe the dimensions of wellness and healthier lifestyles.
- Demonstrate basic knowledge of anatomy, physiology, and biomechanics as it relates to health and exercise programming.
- Demonstrate understanding of the impact of individual health related behaviors on individual's health status.
- Demonstrate ability to describe the concept of risk and risk factors as related to development of acute and chronic illness and ability to recognize risk factors that may require further evaluation before participation in physical activity.
- Demonstrate understanding of the principles of a healthy lifestyle including physical fitness, nutrition, and weight management.
- Demonstrate knowledge of safety plans, emergency procedures, and first aid techniques needed during fitness evaluations, and exercise training.
- Demonstrate basic understanding of the health/fitness instructor's responsibilities, limitations, and the legal implications of carrying out emergency procedures.
- Identify and demonstrate proper procedures and skills for fitness assessments and program design including proper technique for cardiovascular and strength machines.

Physical Education Teacher Education (R): 159A

Arts and Sciences AA

This AA track provides the first two years of a teacher preparation program for the elementary and secondary grade levels.

This curriculum prepares students to transfer to four year institutions with a broad-based background in the study of human movement and education theory and psychology. This curriculum is based upon introducing students to the National Standards for Physical Education (NASPE) for entry level physical education teachers. The program allows the students to fulfill their general education requirements, participate in field work experience, as well as complete a core of professional preparation work that is appropriate for students in their first two years of the physical education major. Courses will address pedagogy, psychology, motor skill and movement abilities as well as health and fitness promotion.

FIRST SEMESTER

BIOL	*150*	*Principles of Biology I (NSLD)*	4
ENGL	101	Introduction to College Writing*	3
MATH	*110*	*Survey of College Mathematics (MATF)*	3
PHED	166	Personal Fitness I†	1
PHED	186	Volleyball	1
PHED	201	Overview of Physical Education	3

SECOND SEMESTER

COMM	*108*	*Introduction to Human Communication*	
		or	
COMM	*112*	*Business and Professional Speech Communication (SPCF)*	3
		Arts distribution	3
HLTH	105	Personal and Community Health	3
PHED	143	Soccer	
		or	
PHED	152	Basketball	1
PHED	163	Weight Training Design for Women	
		or	
PHED	170	Strength Training and Conditional I	1
PHED	228	Group Fitness Instructor Training	3

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

HEALTH ENHANCEMENT/EXERCISE SCI/PHYS ED

Physical Education Teacher Education (R): 159A *(continued)*

THIRD SEMESTER

BIOL	212	Human Anatomy and Physiology I . . .4
EDUC	102	Field Experience in Education 1
ENGL	*102*	*Critical Reading, Writing, and Research* 3
HLTH	125	Personal Health Fitness
		or
PHED	206	Principles and Practices of Health Fitness. 3
PHED	101	Badminton
		or
PHED	116	Tennis I. 1
		Arts or humanities distribution 3

FOURTH SEMESTER

BIOL	*213*	*Human Anatomy and Physiology II (NSLD)* 4
PHED	204	Foundations of Elementary School Physical Education. 3
PSYC	*102*	*General Psychology (BSSD)*. 3
		Behavioral and social sciences distribution‡ 3
		Humanities distribution 3

TOTAL CREDIT HOURS 60

* Students who qualify for a waiver of ENGL 101 may select three credits of electives with approval of the departmental adviser.
† Students must consult with departmental adviser before selecting electives from HLTH, PHED, or other categories.
‡ The two behavioral and social sciences courses must be in different disciplines.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify historical, philosophical, and social perspectives of physical education issues and legislation.
- Analyze and correct elements of motor skills and performance concepts.
- Develop and implement appropriate (e.g. measureable, developmentally appropriate, performance-based) goals and objectives aligned with local, state, and/or national objectives.
- Design and implement content and assessments that are aligned with lesson objectives.
- Demonstrate knowledge of current technology by planning and implementing learning experiences that require students to appropriately use technology to meet lesson objectives.
- Implement effective demonstrations, explanations, and instructional cues and prompts to link physical activity concepts to appropriate learning experiences.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

HEALTH INFORMATION MANAGEMENT

Health Information Management AAS (TP/SS)

Students who plan to major in health information management will be assigned the temporary major of pre-health information management, with POS code 550, until they are officially admitted to the health information management program. Students may take preparatory courses and courses that fulfill General Education requirements during the waiting period. As an alternative to being assigned a temporary major, students waiting for admission to the health information management program may choose to major in general studies or any other open-enrollment program. The Admissions and Records Office at Takoma Park/Silver Spring will assign a matriculated code once students are admitted to the health information management program.

This curriculum is designed to prepare students to function as health information management technicians in health record services located in hospitals, nursing homes, ambulatory care facilities, physician offices, insurance offices, government agencies, and other facilities utilizing health records. The health information management program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education in cooperation with the American Health Information Management Association's Council on Accreditation. Upon successful completion of the program, the graduate will receive the AAS and will be eligible to apply to take the accreditation examination given by the American Health Information Management Association.

The health information management technician is trained in all the functions normally performed by a health record service, which can include analyzing and technically evaluating health records and reports; compiling, interpreting, and utilizing hospital and health care statistics; coding systems, diseases, and operations according to a recognized classification system; assisting with medical facility committee procedures; releasing confidential information in accordance with legal requirements; and abstracting and retrieving medical information. Students in the curriculum are required to earn a grade of C or better in each health information management course before being allowed to proceed to the next course. Full-time and part-time students must see the program coordinator to choose an appropriate sequence of courses as outlined in the Health Information Management Student Handbook. All students must complete HINM-designated courses within the three years prior to graduation. HINM-designated courses not meeting this time requirement must be retaken, or the student must test out in current course content.

(Continued)

HEALTH INFORMATION MANAGEMENT

Health Information Management AAS (TP/SS) *(continued)*

GENERAL EDUCATION REQUIREMENTS

Foundation Courses

		English foundation 3
HLTH	*101*	*Personal and Community Health*
		or
		Health Foundation 1
MATH	*110*	*Survey of College Math (MATF)*
		or
MATH	*117*	*Elements of Statistics (MATF)* 3
COMM	*108*	*Introduction to Human Communication (SPCF)*
		or
COMM	*112*	*Business and Professional Speech Communication (SPCF)* 3

Distribution Courses

		Arts or humanities distribution 3
		Behavioral and social sciences distribution 3
BIOL	*130*	*The Human Body* 3
BIOL	*131*	*The Human Body Lab* *1*

PROGRAM REQUIREMENTS

ENGL	101	Introduction to College Writing*. 3
CMAP	120	Introduction to Computer Applications 3
HINM	170	Management of Health Information . . .2
HINM	115	Medical Terminology I 2
HINM	116	Medical Terminology II. 2
HINM	120	Concepts of Disease. 3
HINM	133	Assembly and Analysis and Alternate Health Care Delivery. 2
HINM	140	Introduction to Health Information Management 1
HINM	145	Legal Aspects of Health Information . .1
HINM	146	Introduction to and Legal Aspects of Health Information Laboratory 1
HINM	150	Introduction to Pharmacology. 1
HINM	155	CPT Coding. 2
HINM	165	ICD-10 Coding 4
HINM	175	Automation of Health Information 2
HINM	200	Professional Practice Experience I. 1
HINM	210	Statistics for Health Information 2
HINM	215	Performance Improvement in Health Information 2
HINM	220	Advanced Coding and Reimbursement. 3
HINM	225	Ambulatory Coding. 2
HINM	230	Electronic Patient Billing. 2
HINM	271	Professional Practice Experience II 2
HINM	272	Professional Practice Experience III . . .1
HINM	280	Research in Health Information. 1

TOTAL CREDIT HOURS 62–67

* ENGL 101 if needed for ENGL 102/103 or general elective

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate appropriate interpersonal and communication skills.
- Illustrate competency in compiling health records and coding medical data using different formats and coding systems.
- Identify the components of management and how they relate to running a health record department.
- Assess management techniques for controlling automated functions in a health record department.
- Apply entry-level knowledge, clinical skills, and professional abilities appropriate for an HIM professional.
- Demonstrate correct spelling, punctuation and proficiency in communicating through the oral and written use of basic medical terminology.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

HEALTH INFORMATION MANAGEMENT

Medical Coder/Abstractor/Biller Certificate (TP/SS): 218

The medical coder/abstractor/biller certificate curriculum is designed to prepare students to function as medical coders, abstractors, and billers in health record services located in hospitals, nursing homes, ambulatory care facilities, insurance companies, and governmental agencies. The coder/abstractor/biller is trained in the following functions normally performed by a health record service: analyzing and technically evaluating health records and reports; compiling, interpreting, and utilizing hospital and health care statistics; coding symptoms, diseases, and operations according to recognized classification systems; and abstracting and retrieving medical information. Students will be introduced to specialty coding and electronic billing requirements in an outpatient setting. All students must complete HINM-designated courses within the three years prior to graduation. HINM-designated courses not meeting this time requirement must be retaken, or the student must test out in current course content.

BIOL	130	The Human Body	3
BIOL	131	The Human Body Lab	1
HINM	133	Assembly and Analysis and Alternate Health Care Delivery	2
HINM	115	Medical Terminology I	2
HINM	116	Medical Terminology II	2
HINM	120	Concepts of Disease	3
HINM	150	Introduction to Pharmacology	1
HINM	155	CPT Coding	2
HINM	165	ICD-10 Coding	4
HINM	220	Advanced Coding and Reimbursement	3
HINM	225	Ambulatory Coding	2
HINM	230	Electronic Patient Billing	2

TOTAL CREDIT HOURS 27

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate appropriate interpersonal and communication skills.
- Show competency in compiling health records and coding medical data using different formats and coding systems.
- Demonstrate entry-level knowledge, clinical skills, and professional abilities appropriate for an HIM professional.
- Demonstrate correct spelling, punctuation, and proficiency in communicating through the oral and written use of basic medical terminology.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

HOSPITALITY MANAGEMENT

Hospitality Management AAS (R)

This program of study is for the student preparing to enter the lodging and food service industry in a supervisory and management capacity. The curriculum contains a core of required courses and general education requirements. Students can customize their remaining studies by taking one of three concentrations: food and beverage management; management/supervision; and meeting, conference, and event planning.

FOOD AND BEVERAGE MANAGEMENT TRACK (347A)

FIRST SEMESTER

BSAD	101	Introduction to Business 3
ENGL	101	Introduction to College Writing* 3
HMGT	100	Customer Service in the Hospitality Industry 1
HMGT	101	Introduction to Hospitality. 3
HMGT	105	Food Sanitation. 1
		Health foundation 2-3
		Mathematics foundation 3

SECOND SEMESTER

HMGT	107	Food and Beverage Management 3
HMGT	110	Food Production Lecture 2
HMGT	111	Food Production Lab. 2
		Arts or humanities distribution† 3
		English foundation 3
		Speech foundation 3

THIRD SEMESTER

HMGT	208	Food and Beverage Cost Controls. 3
HMGT	211	Supervision and Leadership. 3
HMGT	240	Lodging and Food Service Sales and Advertising‡ 3
NUTR	101	Introduction to Nutrition 3
		*Behavioral and social sciences distribution*** 3

FOURTH SEMESTER

HMGT	204	Catering and Banquets 3
HMGT	290	Practicum. 3
		Natural sciences distribution with lab†† . .4
		Electives‡‡. 3

TOTAL CREDIT HOURS FOR FOOD AND BEVERAGE TRACK 60

* ENGL 101, if needed, for ENGL 102/103 or general elective.
† A world language is recommended.
‡ Offered fall only.
** ECON 201 is recommended.
†† CHEM 109 and CHEM 109L are recommended.
‡‡ Elective required by the department.

MANAGEMENT/SUPERVISION TRACK (347B)

FIRST SEMESTER

BSAD	101	Introduction to Business 3
ENGL	101	Introduction to College Writing* 3
HMGT	100	Customer Service in the Hospitality Industry 1
HMGT	101	Introduction to the Hospitality Industry 3
HMGT	105	Food Service Sanitation. 1
		Health foundation 1-3
		Mathematics foundation 3

SECOND SEMESTER

HMGT	143	Management of Front Office Operation†. 3
HMGT	211	Supervision and Leadership in the Hospitality Industry. 3
NUTR	101	Introduction to Nutrition 3
		English foundation 3
		Speech foundation 3

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

HOSPITALITY MANAGEMENT

Hospitality Managment AAS (R) *(continued)*

THIRD SEMESTER

HMGT 201	Lodging and Food Service Law‡	3
HMGT 220	Property Security and Facilities Management‡	3
HMGT 240	Lodging and Food Service Sales and Advertisement‡	3
	*Arts or humanities distribution***	3
	Behavioral and social sciences distribution††	3

FOURTH SEMESTER

HMGT 207	Legal Issues in Labor Management‡	3
HMGT 212	Managing Hospitality Human Resources‡	3
HMGT 290	Hospitality Practicum	3
	Natural sciences distribution with lab‡‡	4
	HMGT elective	3

TOTAL CREDIT HOURS FOR HOSPITALITY MANAGEMENT/SUPERVISION TRACK 61–63

* ENGL 101, if needed, for ENGL 102/103 or general elective.
† Offered spring only.
‡ Offered fall only.
** A world language is recommended.
†† ECON 201 is recommended.
‡‡ CHEM 109 and 109L are recommended.

MEETING, CONFERENCE, AND EVENT PLANNING TRACK (347C)

FIRST SEMESTER

BSAD 101	Introduction to Business	3
ENGL 101	Introduction to College Writing*	3
HMGT 100	Customer Service in the Hospitality Industry	1
HMGT 101	Introduction to the Hospitality Industry	3
HMGT 105	Food Service Sanitation	1
	Mathematics foundation	3

SECOND SEMESTER

HMGT 107	Food and Beverage Management	3
HMGT 211	Supervision and Leadership in the Hospitality Industry	3
NUTR 101	Introduction to Nutrition	3
	English foundation	3
	Speech foundation	3
	Health foundation	1-3

THIRD SEMESTER

HMGT 201	Lodging and Food Service Law†	3
HMGT 204	Catering and Banquets	3
HMGT 240	Lodging and Food Service Sales and Advertising	3
	Arts or humanities distribution‡	3
	*Behavioral and social sciences distribution***	3

FOURTH SEMESTER

HMGT 208	Food and Beverage Cost Control	3
HMGT 250	Meeting, Conference, and Event Planning	3
HMGT 290	Hospitality Practicum	3
	Natural science distribution with lab†	4
	General elective	3

TOTAL CREDIT HOURS FOR MEETING, CONFERENCE, AND EVENT PLANNING TRACK 61–64

* ENGL 101, if needed, for ENGL 102/103 or general elective
† CHEM 109 and 109L are recommended.
‡ A world language is recommended.
** ECON 201 is recommended.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate knowledge of the broad scope and complexity of the hospitality industry.
- Identify key components of exemplary customer service and explain how hospitality employees perform responsibilities in an ethical manner.
- Explain the importance of respecting and promoting diversity, and demonstrate cultural competency in the hospitality industry.
- Demonstrate ability to work individually or in a team to effectively identify, assess, and generate solutions for managerial challenges in the hospitality industry.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

HOSPITALITY MANAGEMENT

Food and Beverage Management Certificate (R): 055

This curriculum is designed for students seeking employment in the food industry. It provides students with a background in food and beverage management and costs, including an updating and/or upgrading of skills for workers already holding industry jobs. Students wishing to pursue a degree may continue in the hospitality management program.

HMGT 100	Customer Service in the Hospitality Industry	1
HMGT 105	Food Service Sanitation	1
HMGT 107	Food and Beverage Management	3
HMGT 110	Principles of Food Production—Lecture	2
HMGT 111	Principles of Food Production—Laboratory	2
HMGT 204	Catering and Banquets	3
HMGT 208	Food and Beverage Cost Control	3
HMGT 211	Supervision and Leadership in the Hospitality Industry	3
	HMGT elective	3
NUTR 101	Introduction to Nutrition	3

TOTAL CREDIT HOURS 24

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Appreciate the complexity of the hospitality industry as a whole.
- Explain general management theory as it applies to food and beverage management.
- Enter, with junior standing, a four-year university with a major in hospitality management.
- Enter a management training program in food and beverage management.
- Demonstrate an ability to work effectively as a member of a team.
- Demonstrate an ability to provide exemplary customer service.
- Demonstrate an ability to perform responsibilities in an ethical manner.
- Be sensitive to the importance of diversity in the hospitality industry.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

HOSPITALITY MANAGEMENT

Food and Beverage Management Letter of Recognition (R): 814

This sequence of three courses is designed for persons who wish to develop skills in food and beverage management. To complete each course in this sequence, students need to demonstrate skills in the following areas: the role of the supervisor in a food and beverage operation; the nature of leadership; the importance of communication; and morale and motivation. A grade of C or better is required in each course in the sequence.

HMGT 107	Food and Beverage Management 3	HMGT 211	Supervision and Leadership in the Hospitality Industry 3
HMGT 208	Food and Beverage Cost Controls. 3		

TOTAL CREDIT HOURS 9

Upon successful completion of this course of study, and application to the Admissions and Records Office, the letter of recognition in food and beverage management will be issued by the chief enrollment services and financial aid officer.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Appreciate the complexity of the hospitality industry as a whole.
- Explain general management theory as it applies to food and beverage management, including the principles of supervision and leadership, the importance of communication, and morale and motivation.
- Demonstrate an ability to work effectively as a member of a team, provide exemplary customer service, and perform responsibilities in an ethical manner.
- Be sensitive to the importance of diversity in the hospitality industry.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

HOSPITALITY MANAGEMENT

Hospitality Supervision and Leadership Certificate (R): 233

This program of study is designed for individuals in a lodging or food service operation who wish to supplement or enhance their college degree and receive supervisory/leadership training. Students can customize the program by choosing courses in lodging or food service specialties.

HMGT 100	Customer Service in the Hospitality Industry	1
HMGT 211	Supervision and Leadership in the Hospitality Industry	3
HMGT 107	Food and Beverage Management	
	or	
HMGT 143	Management of Front Office Operations	3
HMGT 201	Lodging and Food Service Law	3
HMGT 207	Legal Issues in Labor Management	3
HMGT 212	Managing Hospitality Human Resources	3
HMGT 220	Property Security and Facilities Management	3
	HMGT elective	3

TOTAL CREDIT HOURS 22

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Appreciate the complexity of the hospitality industry as a whole.
- Explain general management theory as it applies to hospitality supervision and leadership.
- Enter, with junior standing, a four-year university with a major in hospitality management.
- Enter a management training program in lodging management.
- Demonstrate an ability to work effectively as a member of a team.
- Demonstrate an ability to provide exemplary customer service.
- Demonstrate an ability to perform responsibilities in an ethical manner.
- Be sensitive to the importance of diversity in the hospitality industry.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

HOSPITALITY MANAGEMENT

Hospitality Supervision and Leadership Letter of Recognition (R): 813

This sequence of three courses is designed for persons who wish to develop skills in lodging management. To complete each course in this sequence, students need to demonstrate skills in the following areas: the role of the supervisor in a lodging operation; the nature of leadership; the importance of communication; and morale and motivation. A grade of C or better is required in each course in the sequence.

HMGT 211 Supervision and Leadership in the Hospitality Industry 3
HMGT 207 Legal Issues in Labor Management . . .3
HMGT 212 Managing Hospitality Human Resources. 3

TOTAL CREDIT HOURS 9

Upon successful completion of this course of study, and application to the Admissions and Records Office, the letter of recognition in hospitality supervision and leadership will be issued by the chief enrollment services and financial aid officer.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Appreciate the complexity of the hospitality industry as a whole.
- Explain general management theory as it applies to management of a lodging operation, including the principles of supervision and leadership, the importance of communication, and morale and motivation.
- Demonstrate an ability to work effectively as a member of a team, provide exemplary customer service, and perform responsibilities in an ethical manner.
- Be sensitive to the importance of diversity in the hospitality industry.

Meeting, Conference, and Event Planning Certificate (R): 237

This program of study is designed for individuals working in the hospitality or related industry who wish to enhance their college degree in the field of meeting, conference, and event planning. The certificate focuses on all major aspects involved with planning a meeting, conference, or event, including courses in catering and banquets, food and beverage cost control, lodging and food service law, and sales and advertising of lodging and food services.

HMGT 107 Food and Beverage Management 3
HMGT 201 Lodging and Food Service Law. 3
HMGT 204 Catering and Banquets 3
HMGT 208 Food and Beverage Cost Controls. 3
HMGT 211 Supervision and Leadership in the Hospitality Industry 3
HMGT 240 Lodging and Food Service Sales and Advertising 3
HMGT 250 Meeting and Conference Operations . .3

TOTAL CREDIT HOURS 21

(Continued)

HOSPITALITY MANAGEMENT

Meeting, Conference, and Event Planning Certificate (R): 237 *(continued)*

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Appreciate the complexity of the hospitality industry as a whole.
- Explain general management theory as it applies to hospitality management.
- Understand and/or be able to manage all major aspects of meeting, conference, or event planning, including catering and banquets, food and beverage cost control, lodging and food service law, and sales and advertising.
- Demonstrate an ability to work effectively as a member of a team, provide exemplary customer service, and perform responsibilities in an ethical manner.
- Be sensitive to the importance of diversity in the hospitality industry.

Meeting, Conference, and Event Planning Letter of Recognition (R): 815

This sequence of three courses is designed for persons who wish to develop skills in meeting and event planning. To complete each course in this sequence, students need to demonstrate skills in the following areas: market research, advertising, accounting, food and beverage cost controls, meeting and event planning, and time management. A grade of C or better is required in each course in the sequence.

HMGT 208	Food and Beverage Cost Controls....3	HMGT 250	Meeting and Conference Operations.....3
HMGT 240	Lodging and Food Service Sales and Advertising 3		

TOTAL CREDIT HOURS 9

Upon successful completion of this course of study, and application to the Admissions and Records Office, the letter of recognition in meeting, conference, and event planning will be issued by the chief enrollment services and financial aid officer.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Appreciate the complexity of the hospitality industry as a whole.
- Explain general management theory as it applies to the hospitality industry and demonstrate skills in key aspects of meeting, conference, and event planning: market research, advertising, accounting, food and beverage cost controls, and time management.
- Demonstrate an ability to work effectively as a member of a team, provide exemplary customer service, and perform responsibilities in an ethical manner.
- Be sensitive to the importance of diversity in the hospitality industry.

INTERIOR DESIGN

Students interested in interior design can earn an AA, an AAS, or a certificate (three certificates are available).

Interior Design—Preprofessional (R): 102

Arts and Sciences AA

This transfer program offers beginning college-level courses for students who desire to continue study toward an advanced interior design degree. Content offerings will include concentration on general studies and interior design foundations, fundamental design, drawing, color, space planning, finish treatments, and professional business practices for interior designers. Technical development will include basic knowledge of drafting, historical topics, and presentation techniques for interior designers. Completion of all requirements for this program will lead to the award of the AA in arts and sciences.

A suggested course sequence for students follows; all students should consult an interior design adviser before entering the program.

FIRST SEMESTER

ARTT	*100*	*Introduction to Drawing*	3
ENGL	101	Introduction to College Writing*	3
IDES	101	Interior Design I	3
IDES	107	Interiors: Design Principles	3
IDES	110	Interiors: Technical Drawing and Drafting	3
		Health foundation	1

SECOND SEMESTER

IDES	111	Interior Design II†	3
IDES	116	Interiors: Advanced Presentation Techniques†	3
		Elective (200 level) ‡	1
		English foundation	3
		Mathematics foundation	3

THIRD SEMESTER

ARTT	*200*	*Art History: Ancient to 1400 (ARTD)* *or*	
ARTT	*209*	*Architectural History Ancient to 1400 (ARTD)* *or*	
IDES	211	Historic Interiors I (ARTD)†	3
COMM	*108*	*Introduction to Human Communication (SPCF)*	3
IDES	221	Interior Design Residential†	3
		*Behavioral and social sciences distribution***	3
		Natural science distribution	3

FOURTH SEMESTER

ARTT	201	Art History: 1400 to Present *or*	
ARTT	210	Architectural History 1400 to Present or	
IDES	212	Historic Interiors II††	3
IDES	222	Interior Design Commercial/ Contract††	3
		*Behavior and social sciences distribution***	3
		Humanities distribution	3
		Natural science distribution with lab††	4

TOTAL CREDIT HOURS 60

* ENGL 101 if needed for ENGL 102/103 or general elective.
† This IDES course may not be offered every semester; advising by interior design coordinator is required.
‡ Students should consult with interior design adviser before selecting professional electives.
** The two three-credit-hour behavioral and social sciences courses must be from different disciplines.
†† CHEM 109 and BIOL or PHYS 110 is recommended.

(Continued)

INTERIOR DESIGN

Interior Design—Preprofessional AAS (R) *(continued)*

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Apply design principles and color theory in the execution of interior design projects.
- Identify the correct textiles, materials, finishes, and furniture for specifications.
- Collect and interpret the data necessary to solve interior design problems.
- Demonstrate their understanding of one of the following: historic interiors, art history, or architectural history.
- Apply interior design principles and ethics.
- Execute presentation and construction drawings.
- Demonstrate basic fine art drawing skills.
- Apply design principles and color theory in the execution of interior design projects.

Interior Design—Preprofessional (R)
AAS

This program prepares students for entry-level positions in interior design and related professions, or for portfolio preparation for transfer to out-of-state institutions. Content offerings will include fundamental design, drawing, color, space planning, and historical topics; fabrics, lighting, window, wall, and floor treatments; and professional business practices for interior designers. Technical development will include architectural drafting; preparation of estimates; design analysis; kitchen, bath, structural, mechanical, and electrical systems; and advanced presentation techniques for interior designers. Completion of requirements for this program will lead to the award of the AAS.

Students may select one of two tracks: (1) the general track, which allows students to select nine ID professional electives; or (2) the NKBA track, which meets the requirements of the National Kitchen and Bath Association accreditation, and requires specific courses instead. A grade of B or better is required in all interior design classes for the NKBA track degree. If these conditions are not met, a general track degree will be awarded. Students with the NKBA track degree will be able to sit for the NKBA AKBD examination upon graduation.

A suggested course sequence for full-time students follows. All students should consult an interior design adviser before entering the program.

PREPROFESSIONAL GENERAL TRACK (306A)

FIRST SEMESTER

ENGL	101	Introduction to College Writing*	3
IDES	101	Interior Design I	3
IDES	107	Interiors: Design Principles	3
IDES	110	Interiors: Technical Drafting and Drawing	3
		Speech foundation	3
		IDES elective (200 level)†	2

SECOND SEMESTER

IDES	111	Interior Design II‡	3
IDES	116	Interiors: Advanced Presentation Techniques‡	3
		English foundation	3
		Health foundation	1
		Mathematics foundation	3
		IDES professional elective (200 level) †	2

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

INTERIOR DESIGN

Interior Design—Preprofessional (R) *(continued)*

THIRD SEMESTER

IDES	120	Interiors: Computer Presentation Techniques	3
		IDES elective (200 level)†	2
IDES	*211*	*Historic Interiors I (ARTD)*‡	3
IDES	221	Interior Design Residential	3
IDES	234	Textiles‡	3
		Natural sciences distribution with lab	4

FOURTH SEMESTER

IDES	212	Historic Interiors II‡	3
IDES	222	Interior Design: Commercial/Contract‡	3
IDES	272	Business Practices and Procedures for Interior Design‡	3
		Behavioral and social sciences distribution	3
		IDES elective (200 level)	3

TOTAL CREDIT HOURS FOR PREPROFESSIONAL GENERAL TRACK 65

* ENGL 101 if needed for ENGL 102/103.
† Students should consult with interior design adviser before selecting professional electives. Maximum of 4 credits from IDES 262, IDES 275, IDES 280, IDES 285. Minimum of 5 credits from IDES 1-credit courses.
‡ This IDES course is not offered every semester; advising by interior design coordinator is required.

NKBA-ACCREDITED TRACK (306B)

FIRST SEMESTER

ENGL	101	Introduction to College Writing	3
IDES	101	Interior Design I	3
IDES	107	Interiors: Design Principles	3
IDES	110	Interiors: Technical Drafting and Drawing	3
		Speech foundation	3
		NKBA track elective (200 level)	2

SECOND SEMESTER

IDES	111	Interior Design II*	3
IDES	116	Interiors: Advanced Presentation Techniques*	3
		NKBA track elective (200 level)	2
		English foundation	3
		Health foundation	1
		Mathematics foundation	3

THIRD SEMESTER

IDES	120	Interiors: Computer Presentation Techniques*	3
		NKBA track elective (200 level)	2
IDES	*211*	*Historic Interiors I**	3
IDES	221	Interior Design Residential*	3
IDES	234	Textiles*	3
		Natural sciences distribution with lab	4

FOURTH SEMESTER

IDES	212	Historic Interiors II*	3
IDES	222	Interior Design: Commercial/Contract	3
IDES	261	Interiors: Professional Practicum Internship†	3
IDES	272	Business Practices and Procedures for Interior Design*	3
		Behavioral and social sciences distribution	3

TOTAL CREDIT HOURS FOR NKBA-CREDITED TRACK 65

* This IDES course may not be offered every semester; advising by interior design adviser is required.
† Internship must be approved by interior design adviser.

PROGRAM OUTCOMES FOR ALL TRACKS

Upon completion of this program a student will be able to:

- Apply design principles and color theory in the execution of interior design projects.
- Identify the correct textiles, materials, finishes, and furniture for specifications.
- Collect and interpret the data necessary to solve interior design problems.
- Demonstrate an understanding of the historic styles of interior design.
- Execute presentation and construction drawings.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

INTERIOR DESIGN

Introductory Interior Design Certificate (R): 226

This curriculum is intended to provide new skills for individuals with no previous related education or experience; for students currently employed in unrelated careers, intending to make a significant career change; and for individuals intending to enter a first career in an entry-level assistantship position. Focus includes general foundation core education in interior design, combined with advanced and more technical courses, geared specifically to meet the career goals of the student. Course selection requires close supervision by the interior design adviser.

IDES	101	Interior Design I	3
IDES	107	Interiors: Design Principles*	3
IDES	110	Interiors: Technical Drawing and Drafting	3
IDES	111	Interior Design II*	3
IDES	116	Interiors: Advanced Presentation Techniques*	
		or	
IDES	120	Interiors: Computer Presentation Techniques*	3
IDES	211	Historic Interiors I*	
		or	
		IDES professional electives†	3
IDES	212	Historic Interiors II*	
		or	
		IDES professional electives†	3
IDES	272	Business Practices and Procedures for Interior Design*	3
		IDES professional electives†	6
		TOTAL CREDIT HOURS	**30**

* This IDES course may not be offered every semester.
† IDES professional electives: IDES 221, IDES 222, IDES 234, IDES 275, and one-credit IDES professional electives. Select electives in consultation with interior design adviser.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Apply design principles and color theory at a basic level in the execution of interior design projects.
- Identify the correct textiles, materials, finishes, and furniture for simple specifications.
- Collect and interpret the data necessary to solve simple interior design problems.
- Execute basic presentation and construction drawings.
- Be familiar with interior design principles and ethics.

INTERIOR DESIGN

Advanced Interior Design Certificate (R): 224

This curriculum is intended to upgrade skills for currently employed individuals in interiors-related careers, to provide new skills, or to provide skills for a change in job specialization. The concentration is on technical and specialized education in advanced design topics, such as lighting, kitchen, bath, office, AA specifications, and other specialty career options within the interior design profession. Portfolio and/or résumé review approval by the program adviser is required prior to enrollment in the advanced courses.

IDES	116	Interiors: Advanced Presentation Techniques*	
		and/or	
IDES	120	Interiors: Computer Presentation Techniques*	3–6
IDES	211	Historic Interiors I*	
		and/or	
IDES	212	Historic Interiors II*	3–6
IDES	221	Interior Design: Residential*	
		and/or	
IDES	222	Interior Design: Commercial/ Contract*	3–6
IDES	272	Business Practices and Procedures for Interior Design*	3
		ARCH and/or IDES professional electives†	9–18

TOTAL CREDIT HOURS 30

* This IDES course may not be offered every semester.
† IDES professional electives: IDES 234, IDES 262 , IDES 275, one-credit IDES professional electives, or ARCH elective as determined in consultation with the interior design adviser.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Apply design principles and color theory in the execution of interior design projects.
- Identify the correct textiles, materials, finishes, and furniture for specifications.
- Collect and interpret the data necessary to solve interior design problems.
- Execute presentation and construction drawings.
- Be familiar with interior design principles and ethics.

INTERIOR DESIGN

Design Industry Partnership Certificate (R): 225

This curriculum is intended to provide basic skills and foundation education in interior design and in a specialized career topic, indirectly related to interior design, in disciplines that partner with the interior design community.

Typical interior design industry partners include advertising designers, architects, business owners (merchandising/retailing), contractors and builders, craftspeople, custom fabricators (drapery, etc.), fine artists (including sculptors), furniture designers and manufacturers, health care providers, insurance brokers, interior landscape designers, interior photographers, lawyers, mural artists and faux finishers, product representatives, specifiers and draftspeople, theatre and set designers, weavers and textile manufacturers, and web designers. The curriculum will provide the necessary knowledge of interior design as it relates to the student's success in a career that requires a professional partnership with interior designers.

The selected interior design courses will be taken in combination with the courses selected from the other discipline, or the student will demonstrate experience and accomplishment or completion of the other discipline. College sources, such as program coordinators from the "partner" disciplines, will be consulted for advising in the course selection. Close advising by the interior design coordinator is required.

IDES	101	Interior Design I	3
IDES	107	Interiors: Design Principles	3
IDES	110	Interiors: Technical Drawing and Drafting*	3
IDES	111	Interior Design II*	3
IDES	272	Business Practices and Procedures for Interior Design*	3
		Industry partner discipline elective†	15
		TOTAL CREDIT HOURS	**30‡**

* This IDES course may not be offered every semester.

† Select industry partner discipline electives related to student goals in consultation with program advisers. Elective areas may include accounting, architecture, art, building trades, business/management, construction, graphic design, landscape, law, photography, and other areas as appropriate.

‡ Up to 12 credits can be waived, with appropriate proof of career success in one of the industry partner disciplines named.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Apply design principles and color theory at a basic level in the execution of interior design projects.
- Collect and interpret the data necessary to solve simple interior design problems.
- Execute basic presentation and construction drawings.
- Complete similar studies in a related field.
- Integrate his or her studies in interior design into his or her other field of study.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

LANDSCAPE TECHNOLOGY

Landscape Technology AAS (G): 328

This program provides the student with a comprehensive mixture of academic and practical training in the field of ornamental horticulture. The flexible curriculum can accommodate career interests in either landscape contracting or design. Students will learn to design and draft landscape plans; install, construct, and maintain landscapes; and identify, select, and plant woody and herbaceous plants.

Career opportunities include positions as landscape supervisors, nursery managers, landscape contractors, and landscape designers. This program will also serve to expand the knowledge and skills of persons already working in the profession and give the student enough knowledge and experience to establish a private landscape, grounds maintenance, nursery, or greenhouse business.

Courses include those general subjects required for graduation (general education foundation and distribution requirements); those necessary for acquiring landscaping fundamentals (core requirements); and those that reinforce the student's area of interest (landscape contracting or landscape design). This program is approved by the Landscape Contractors Association.

FIRST SEMESTER

BIOL	*101*	*General Biology*
		or
LNTP	*100*	*Introduction to Plant Sciences (NSLD)* . . .4
ENGL	101	Introduction to College Writing* 3
LNTP	105	Introduction to Landscape Technology 2
LNTP	253	Plant Materials I 3
		Mathematics foundation 3

SECOND SEMESTER

CMAP	120	Introduction to Computer Applications 3
LNTP	254	Plant Materials II 3
		LNTP electives† 6
		English foundation 3

THIRD SEMESTER

BSAD	101	Introduction to Business
		or
MGMT	101	Principles of Management 3
		Arts or humanities distribution 3
		Health foundation 1-3
		Speech foundation 3
		LNTP elective† 6

FOURTH SEMESTER

CHEM	131	Principles of Chemistry
		or
		Natural sciences distribution 3-4
LNTP	258	Landscape Management 3
LNTP	280	Landscape Technology Internship. 2
		Behavioral and social sciences distribution 3
		LNTP elective† 3

TOTAL CREDIT HOURS 60–63

* ENGL 101, if needed, for ENGL 102/103 or general elective.
† Please consult a Landscape Technology adviser before selecting these courses.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Design, draft, and implement landscape plans.
- Install, construct, and maintain landscapes.
- Identify common plants in Maryland landscapes.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

LANDSCAPE TECHNOLOGY

Landscape Technology Certificate (G): 140

This curriculum provides training, skills, and technical knowledge for landscape industry employees or allows students to obtain positions in the field of ornamental horticulture. Students may train in either landscape contracting or landscape design. Students may enter the job market immediately upon completion of the curriculum or apply earned credits toward an AAS in landscape technology. Selected courses in this curriculum have been approved by the Maryland Department of Agriculture to prepare the horticultural professional for pesticide application certification in Category III (Turf and Ornamentals). These courses include LNTP 258, LNTP 190, LNTP 215, and LNTP 222. For more information contact the landscape technology adviser or the Maryland Department of Agriculture.

PROGRAM REQUIREMENTS

BSAD	101	Introduction to Business	
		or	
MGMT	105	Principles of Management	3
LNTP	101	Introduction to Landscape Technology	2
LNTP	253	Plant Materials I	3
LNTP	254	Plant Materials II	3
LNTP	258	Landscape Management	3
LNTP	280	Landscape Technology Internship	2

ELECTIVES (SELECT 15 CREDITS)*

Landscape Contracting Courses

LNTP	244	Herbaceous Plant Materials	3
LNTP	115	Water Garden Management	2
LNTP	135	Landscape Technologies for Stormwater Maintenance	1
LNTP	150	Introduction to Aboriculture	1
LNTP	190	Pesticide Use and Safety	2
LNTP	204	Landscape Construction Methods and Estimating	3
LNTP	215	Pest Management	3
LNTP	222	Turfgrass Management	3
LNTP	271	Plant Propagation and Production	3

Landscape Design Courses

LNTP	115	Water Garden Management	2
LNTP	135	Landscape Technologies for Stormwater Maintenance	1
LNTP	145	Creating Gardens in a Digital Age	2
LNTP	161	Landscape Graphics	3
LNTP	162	Landscape Design	3
LNTP	204	Landscape Construction Methods and Estimating	3
LNTP	244	Herbaceous Plant Materials	3

TOTAL CREDIT HOURS 31

* Please consult a landscape technology adviser before selecting these courses.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Describe the basic morphology and anatomy of a woody plant.
- Describe the key factors that influence plant growth and seed germination.
- Identify and correct common nutritional and abiotic problems found in the landscape.
- Describe the major types of pruning and training used on plant material.
- Design, draft, and implement landscape plans.
- Install, construct, and maintain landscapes.
- Identify over 200 woody and herbaceous plants.
- Identify over 50 common landscape and lawn weeds.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

LIBERAL ARTS AND SCIENCES

International Studies: 152

Arts and Sciences AA

The international studies track is designed for students who envision a career in the international arena and plan to transfer into the upper division of another college or university with the intention of continuing their studies in such areas as international relations and area studies. This track is for students who, subsequently, wish to work in this field, be it in government, international organizations, trade, finance, business, or related areas.

All students in this track must see an adviser from the Department of History and Political Science and identify as early as possible their transfer institution, as well as the particular field or track. The international studies track includes the general education requirements as well as a number of alternate course choices (listed in the footnotes), which prepare the student for particular transfer options in international studies, such as international relations and area studies.

Students may study abroad for a semester or travel in a foreign country during the summer as part of the international studies track. The international studies adviser will aid students in integrating their studies abroad into the degree program.

A suggested course sequence for full-time students follows; part-time students should consult an adviser.

FIRST SEMESTER

ENGL	101	Introduction to College Writing*	3
HIST	*114*	*The World in the 20th Century*	
		or	
HIST	*116*	*World History: A Comparative Survey from the Ancient World to A.D. 1500*	
		or	
HIST	*117*	*World History: A Comparative Survey from A.D. 1500 to the Present (HUMD)*	3
POLI	*101*	*American Government*	3
		Mathematics foundation (MATH 110 or higher)	3
		World language	3-5

SECOND SEMESTER

ECON	105	Basic Economics or alternates (see alternatives†)	3
POLI	203	International Relations	3
		English foundation	3
		Speech foundation	3
		World language	3-5

THIRD SEMESTER

ENGL	201	Introduction to World Literature I (see alternatives ‡)	3
GEOG	*101*	*Introduction to Geography*	3
HIST	*245*	*Latin American History*	
		or	
HIST	*247*	*East Asian Civilization*	
		or	
HIST	*250*	*Modern Asia*	
		or	
HIST	*252*	*The United States and 20th Century World Affairs (HUMD)*	
HIST	*266*	*African History from 1800 (HUMD)*	3
POLI	211	Comparative Politics and Governments	3
		Natural sciences distribution with lab	4

FOURTH SEMESTER

POLI	206	Political Ideologies	
		or	
POLI	230	Introduction to International Conflict Resolution	
		or	
POLI	256	Politics of the Developing World	3
ANTH	201	Introduction to Sociocultural Anthropology (see alternatives**)	3
		Arts distribution	3
		Health foundation††	2-3
		Natural sciences distribution with lab	3-4

TOTAL CREDIT HOURS 60–66

* ENGL 101, if needed, for ENGL 102/103 or general elective.
† Alternates: ANTH 256, ECON 201, GEOG 105, GEOG 113, GEOG 124, GEOG 211, PSYC 102, SOCY 105.
‡ Alternates: ENGL 122, ENGL 205, ENGL 208, HIST 255, third world language course.
** Alternates: ANTH 256, ECON 103, ECON 105, PSYC 102, SOCY 100.
††1 credit PHED course may be substituted for second and third credits for health.

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

LIBERAL ARTS AND SCIENCES

International Studies: 152 *(continued)*

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Articulate the political, cultural, ideological, historical, religious, and/or philosophical contexts of current global actors, systems, and controversies.
- Explain the historic and contemporary consequences of geographic and linguistic boundaries for cross-cultural dialog and diplomacy.
- Compare the costs and benefits of varying social, economic, and political structures in the context of globalization.

MANAGEMENT

Credits earned in the management certificate and supervisory letter of recognition curricula may be applied toward an AA in General Studies. Students interested in a baccalaureate degree should enroll in the business transfer curriculum.

Management Certificate: 145

The Management Certificate curriculum provides students with the opportunity to learn the concepts and principles of management. The program structure allows students to focus on a preferred field of study, and the opportunity to pursue particular academic and professional interests and goals in management. A grade of C or better is required for each course.

Credits earned for the management certificate and supervisory letter of recognition may be accepted toward an AA in general studies. Students interested in a BS or BA degree in business should enroll instead in the business AA degree 006.

PROGRAM REQUIREMENTS

MGMT	101	Principles of Management 3
MGMT	201	Business Law 3

ELECTIVES (12 CREDIT HOURS)

BSAD	101	Introduction to Business 3
ENGL	103	Critical Reading, Writing and Research in the Workplace 3
MGMT	110	Small Business Management 3
MGMT	207	Principles of Supervision 3
MGMT	211	Introduction to Marketing 3
MGMT	214	Human Resources Management 3
MGMT	220	Organizational Behavior 3
MGMT	225	Legal Issues in Labor Management . . .3
MGMT	235	Managing Diversity in The Workplace 3
MGMT	270	Field Experience or Practicum 3
MGMT	288	Disaster Recovery and Risk Management. 3

TOTAL CREDIT HOURS 18

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Explain, identify, and relate the four functions of management to everyday business operations.
- Explain the importance of human resource management and describe and apply the human resource core functions necessary for diverse organizations.
- Apply decision making processes to business situations and analyze managerial problems.
- Identify the legal issues that impact business organizations and explain the importance of ethics and corporate social responsibility.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

MANAGEMENT

Supervisory Letter of Recognition: 805A

This sequence of courses is designed for those students who wish to develop skills for employment as a first-time supervisor. Students will gain an understanding of core skills and theory needed for supervisors and managers. In addition, students will gain an understanding of foundations in business law with an emphasis on employment laws including Title VII of the Civil Rights Act of 1964. A grade of C or better is required for each course.

MGMT 101 Principles of Management 3
MGMT 207 Principles of Supervision 3

MGMT 201 Business Law
or
MGMT 225 Legal Issues in Labor Management . . .3

TOTAL CREDIT HOURS 9

Upon successful completion of this course of study, and application to the Admissions and Records Office, the letter of recognition in supervisory management will be issued by the chief enrollment services and financial aid officer.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Interpret the procedures and requirements within the area of employee/labor relations.
- Discuss the attitude and image of the supervisor.
- Explain human relations skills and team building.
- Suggest effective ways to get work done.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

MENTAL HEALTH ASSOCIATE

Mental Health Associate AAS (TP/SS)

Students who plan to major in mental health associate will be assigned the temporary major of pre-mental health associate, with POS code 560, until they are officially admitted to the mental health associate program. Students may take preparatory courses and courses that fulfill general education requirements during the waiting period. As an alternative to being assigned a temporary major, students waiting for admission to the mental health associate program may choose to major in general studies or any other open-admission program. The Office of Admissions, Records, and Registration at Takoma Park will assign a matriculated code once students are admitted to the mental health associate program.

This curriculum is designed to educate a mental health generalist who is trained for a variety of related occupations, rather than for a specific job. Students study a core of general education subjects combined with specialized courses related to a wide spectrum of human services. Part of the curriculum consists of supervised field experiences in several different kinds of agencies and institutions in the field of human services such as those in mental health, mental retardation, gerontology, drugs and alcohol rehabilitation, corrections, and school systems, and in culturally disadvantaged areas.

The mental health associate curriculum has three objectives: (1) to prepare the career student who wants a technical curriculum for immediate paid employment upon graduation, (2) to provide the transfer student with an adequate and yet flexible background so that study may be continue in the field of psychology or some allied field such as sociology or social work, and (3) to permit a student to continue with an education on a part-time basis, while being gainfully employed.

In addition to the general requirements for admission to the College, applicants will be interviewed by the coordinator of the mental health associate curriculum. Personal characteristics such as maturity, aptitude, motivation, previous experience, and evidence of ability to complete the curriculum will be considered.

In addition to the scholastic standards required of all students at the College, students in the mental health associate curriculum are expected to achieve a grade of C or better in each mental health and psychology course. Completion of all requirements for this curriculum will lead to the award of the AAS.

GENERAL EDUCATION REQUIREMENTS

Foundation Courses

	English foundation	3
HLTH	*100 Principles of Healthier Living (HLHF)*	1
MATH	*117 Statistics or Mathematics foundation (MATF)*†	3
	Speech foundation	3

Distribution Courses

	Arts or humanities distribution	3
	Behavioral and social sciences distribution	3
	Natural sciences distribution with lab	4

PROGRAM REQUIREMENTS

ENGL	101	Techniques of Reading and Writing I*	3
MHLT	101	Introduction to Mental Health I	3
MHLT	102	Introduction to Mental Health II	3
MHLT	112	Group Dynamics I	3
MHLT	200	Practicum/Fieldwork in Mental Health/Human Services†	12
MHLT	208	Activities Therapies	
		or	
ECON	201	Principles of Economics I	
		or	
POLI	101	American Government††	3
MHLT	213	Group Dynamics II	3
PSYC	102	General Psychology	3
PSYC	221	Introduction to Abnormal Psychology	3
		Elective ‡	4

TOTAL CREDIT HOURS 60

* ENGL 101 if needed for EN102/103 or general elective.
† MATH 117 recommended for student interested in transferring to a four year institution for social science.
‡ See program coordinator for help with course selection.

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

MENTAL HEALTH ASSOCIATE

Mental Health Associate AAS (TP/SS) *(continued)*

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate an understanding of the history of the mental health movement as it relates to human service professionals.
- Demonstrate an understanding of the current trends in the delivery of human services.
- Demonstrate an understanding of the characteristics of the effective human service professionals.
- Apply interview and related skills to demonstrate that they can communicate effectively in verbal and written language.
- Apply skills learned through agency paper assignment and be able to communicate effectively in verbal and written language.
- Demonstrate an understanding of group dynamics theory.
- Apply non-verbal communication skills to fieldwork.
- Demonstrate an understanding of leadership skills and the application of current group methods.
- Apply skills learned from fieldwork assignment and to communicate effectively through verbal and written language.

MUSIC

Music (R): 054

Arts and Sciences AA

The music curriculum is designed for the student who plans (1) to earn the bachelor of arts degree with a major in music; (2) to earn the bachelor of music education degree; (3) to earn the bachelor of music degree with a major in performance, theory-composition, or history-literature; or (4) to seek employment upon completion of the AA. Montgomery College is a community college member of the National Association of Schools of Music.

Completion of all requirements for this track will lead to the award of the AA in arts and sciences. In addition to the specific course sequence outlined in this section, the following department requirements must be met:

1. Music majors enrolled in applied music courses must also register for MUSC 150 Applied Music Laboratory.
2. Students receiving the AA must perform in a graduation recital.
3. All applied music students must register each semester for MUSC 163, MUSC 166, or other ensemble, as assigned by the department.

The student normally takes 16–17 credit hours each semester, for a total of 65–66 semester hours. The actual courses taken each semester will be selected by the student in consultation with a music adviser. Courses are selected from those general subjects required for graduation (General Education foundation and distribution requirements) and those necessary for acquiring musical knowledge (music requirements).

(Continued)

MUSIC

Music AA (R): 054 *(continued)*

Anyone wishing to major in music at Montgomery College must first complete an audition interview with a full-time faculty member in the Department of Music. A suggested course sequence for full-time students follows; part-time students as well as full-time students must consult an adviser from the department before registering for music classes.

FIRST SEMESTER

MUSC	###	Large Ensemble 1
MUSC	141	Class Piano I 2
MUSC	147	Applied Music 2
MUSC	150	Applied Music Laboratory* 1
MUSC	190	Music Theory I 3
MUSC	194	Ear-Training and Sight/Singing I. 2
		Behavioral and social sciences distribution 3
		Mathematics foundation 3

SECOND SEMESTER

ENGL	*102*	*Critical Reading, Writing, and Research (ENGF)*† 3
MUSC	###	Large Ensemble 1
MUSC	142	Class Piano II 2
MUSC	148	Applied Music 2
MUSC	150	Applied Music Laboratory 1
MUSC	191	Music Theory II 3
MUSC	195	Eart Training and Sight/Singing II 2
		Behavior and social sciences distribution . . 3

THIRD SEMESTER

MUSC	###	Large Ensemble 1
MUSC	150	Applied Music Laboratory 1
MUSC	215	Applied Music 2
MUSC	233	Music Theory III. 3
MUSC	237	Ear Training and Sight/Singing III 2
		Arts or humanities distribution 3
		Natural sciences distribution with lab 4

FOURTH SEMESTER

MUSC	150	Applied Music Laboratory 1
MUSC	216	Applied Music 2
MUSC	234	Music Theory IV. 3
MUSC	238	Ear Training and Sight/Singing IV 2
		Health foundation 1
		Humanities distribution 3
		Natural science distribution 3–4

TOTAL CREDIT HOURS 62–63

* Course must be taken four times for credit.
† Students should check prerequisites for ENGL 102.
Check with the department for course selections which include Jazz ensemble, World Ensemble, Chorus, and Orchestra

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate a conceptual understanding of the fundamentals of music theory from basic notation and ear training through part writing and macroanalysis at the sophomore level.
- Identify musical periods and styles from the Middle Ages to the present.
- Demonstrate a level of proficiency in music performance/education for transfer to a four-year program in music or for work in a variety of music related careers.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

MUSIC

Music Certificate (R): 204

The music certificate curriculum consists of music courses that are required in music major programs at professionally accredited colleges, universities, and conservatories. It is intended for students who wish to transfer to these institutions.

Students would be advised to take approximately 30 additional credits chosen to match the first two years of the program into which they plan to transfer.

APPLIED MUSIC (8 CREDIT HOURS)

Students will take MUSC 147, MUSC 148, MUSC 215, and MUSC 216.

APPLIED MUSIC LABORATORY (4 CREDIT HOURS)

Students will take MUSC 191 four times.

LARGE ENSEMBLE (4 CREDIT HOURS)

Students will take MUSC 166, MUSC 172 and/or MUSC 163.

MUSIC THEORY (12 CREDIT HOURS)

Students will take MUSC 190, MUSC 191, MUSC 233, and MUSC 234.

EAR TRAINING AND SIGHTSINGING (8 CREDIT HOURS)

Students will take MUSC 194, MUSC 195, MUSC 237, and MUSC 238.

TOTAL CREDIT HOURS 36

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate a conceptual understanding of music theory from basic notation and ear training through part writing and macroanalysis at the sophomore level.
- Identify musical periods and styles from the Middle Ages to the present.
- Demonstrate a level of proficiency in music performance/evaluation for transfer to a four-year program in music or for work in a variety of music-related careers.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

NETWORK AND WIRELESS TECHNOLOGIES

IT Professional+ Certificate (G): 254

This career certificate is designed to provide students with technical understanding of computer technology, networking and security, as well as the communication skills and professionalism required of all entry-level IT professionals. Skills included software and hardware installation, network configuration and diagnosing, and preventive maintenance and security fundamentals. This certificate program is more of a "hands-on" orientation focused on scenarios in which troubleshooting and tools must be applied to resolve problems. It also prepares students to take professional CompTIA A+, Linux+, Network+, and Security+ certificates.

NWIT	127	Microcomputer Essentials	3
NWIT	140	Microcomputer Practical Application	3
NWIT	170	Network Operating Systems	3
NWIT	173	Network Security	3
CMSC	253	Linux/Unix System Administration	4

TOTAL CREDIT HOURS 16

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate solid foundation skills and competency in a range of microcomputer hardware and software configuration and troubleshooting techniques.
- Demonstrate safe practices in the use of microcomputer hardware and software.
- Demonstrate ability, verbally and in writing, to think critically and analyze network structures.
- Demonstrate problem solving that employs technical skills and comprehension of networking with application to current industry.
- Understand and employ the skills and concepts used to secure networks.
- Demonstrate constructive and organized work habits.
- Demonstrate students' readiness to take the CompTIA A+, Linux+, Network+, and Security+ certificates.

This program is not currently eligible for federal and state financial aid.

NETWORK AND WIRELESS TECHNOLOGIES

Network and Wireless Technologies AAS (G)

This AAS is a three-track degree which provides entry-level skills in the fields of wireless, Cisco networking, and Microsoft systems. The career curriculum is designed to accommodate both students and the business community. Regardless of track, all students take the 44 credit hours of General Education and core requirements.

The wireless technologies track consists mainly of cellular, WiFi, wireless and wired security, microcomputers, and electronics. Topics include wireless communications theory and practice, electronics for wireless technologies, solid state devices, wireless system design, security, and test equipment used in wireless communications.

The Cisco and Microsoft tracks will prepare technically skilled individuals in network engineering and administration. Graduates complete a comprehensive program preparing them for positions involving client needs assessment, network design, network installation and maintenance, internet communication and connectivity, specialized network functions, and on-site network administration.

The Cisco track will assist students in preparing for the CompTIA Network+ exams and, depending on which electives are taken, it will also help prepare students for the Certified Novell Administrator (CNE) and Cisco Certified Network Associate (CCNA) exams.

The Microsoft track will help students prepare for the Microsoft Certified Professional (MCP) and Microsoft Certified Systems Administrator (MCSA) certification exams.

WIRELESS TECHNOLOGIES TRACK: 354A

FIRST SEMESTER

ENGL	101	Introduction to College Writing	3
NWIT	101	Introduction to Wireless Technologies	3
NWIT	127	Microcomputer Essentials	3
NWIT	140	Microcomputer Practical Applications	3
		*Mathematics foundation**	3

SECOND SEMESTER

NWIT	130	Network Cabling Technology	3
NWIT	150	Electronics for Wireless	4
NWIT	170	Network Operating Systems	3
		English foundation	3
		Speech foundation	3

THIRD SEMESTER

NWIT	151	Introduction to Networking	3
NWIT	173	Network Security	3
NWIT	229	Wireless Communications	4
		Health foundation	1
		Natural sciences distribution with lab	4

FOURTH SEMESTER

NWIT	274	Advanced Wireless Communications	4
NWIT	275	Wireless Security	3
		Arts or humanities distribution	3
		Behavioral and social sciences distribution	3
		Technical elective†	1-3

TOTAL CREDIT HOURS FOR WIRELESS TECHNOLOGIES TRACK 60–62

* Students should consult with an adviser regarding the requirements of transfer institutions. It is strongly recommended that in the event students want to transfer or be considered for a higher level position in industry, they take MATH 180 Precalculus for their mathematics foundation course.

† An acceptable elective is any NWIT 200-level course or CMSC 253.

(Continued)

NETWORK AND WIRELESS TECHNOLOGIES

Network and Wireless Technologies AAS (G) *(continued)*

MICROSOFT TRACK: 354B

FIRST SEMESTER

ENGL	101	Introduction to College Writing	3
NWIT	101	Introduction to Wireless Technologies	3
NWIT	127	Microcomputer Essentials	3
NWIT	140	Microcomputer Practical Application	3
NWIT	151	Introduction to Networking	3

SECOND SEMESTER

NWIT	170	Network Operating Systems	3
NWIT	200	Microsoft Windows Client Operating System	3
NWIT	203	Microsoft Windows Server	3
		English foundation	3
		*Mathematics foundation**	3

THIRD SEMESTER

NWIT	173	Network Security	3
NWIT	204	Supporting Microsoft Windows Network Infrastructure	3
		Speech foundation	3
		Natural science distribution with lab	4
		Technical Electives†	3

FOURTH SEMESTER

NWIT	130	Network Cabling Technology	3
		Arts or humanities distribution	3
		Behavioral and social sciences distribution	3
		Health foundation	1
		Technical electives†	4

TOTAL CREDIT HOURS FOR MICROSOFT TRACK 60

* Students should consult with an adviser regarding the requirements of transfer institutions. It is strongly recommended that in the event students want to transfer or be considered for a higher level position in industry, they take MATH 180 Precalculus for their mathematics foundation course.

† Acceptable electives are any combination of 4-credit and 3-credit NWIT 200-level courses or any NWIT 200-level course and CMSC 253 that totals at least 7 credits.

CISCO TRACK: 354C

FIRST SEMESTER

ENGL	101	Introduction to College Writing	3
NWIT	101	Introduction to Wireless Technologies	3
NWIT	127	Microcomputer Essentials	3
NWIT	140	Microcomputer Practical Applications	3
		*Mathematics foundation**	3

SECOND SEMESTER

NWIT	130	Network Cabling Technology	3
NWIT	151	Introduction to Networking	3
NWIT	170	Network Operating Systems	3
NWIT	252	Cisco Networking 2	3
		English foundation	3

THIRD SEMESTER

NWIT	173	Network Security	3
NWIT	253	Cisco Networking 3	3
NWIT	254	Cisco Networking 4	3
		Behavioral and social sciences distribution	3
		Speech foundation	3

FOURTH SEMESTER

		Arts or humanities distribution	3
		Health foundation	1
		Natural sciences distribution with lab	4
		Elective†	4
		Elective†	3

TOTAL CREDIT HOURS FOR CISCO TRACK 60

* Students should consult with an adviser regarding the requirements of transfer institutions. It is strongly recommended that in the event students want to transfer or be considered for a higher level position in industry, they take MATH 180 Precalculus for their mathematics foundation course.

† Acceptable electives are any combination of 4-credit and 3-credit NWIT 200-level courses or CMSC 253, or any combination of NWIT 200-level courses or CMSC 253 that totals at least 7 credits.

(Continued)

NETWORK AND WIRELESS TECHNOLOGIES

Network and Wireless Technologies AAS (G) *(continued)*

PROGRAM OUTCOMES FOR WIRELESS TECHNOLOGIES TRACK

Upon completion of this program a student will be able to:

- Install, maintain, and evaluate computer networks.
- Design network systems and architecture.
- Demonstrate best practices in the use of lab equipment and network hardware.
- Maintain, troubleshoot, and repair wireless communications.

PROGRAM OUTCOMES FOR MICROSOFT TRACK

Upon completion of this program a student will be able to:

- Install, maintain, and evaluate computer networks.
- Design network systems and architecture.
- Demonstrate best practices in the use of lab equipment and network hardware.
- Show capability to operate and use Windows Server to include Active Directory.
- Demonstrate best practices in the implementation of network security.

PROGRAM OUTCOMES FOR CISCO TRACK

Upon completion of this program a student will be able to:

- Install, maintain, and evaluate computer networks.
- Design network systems and architecture.
- Demonstrate best practices in the use of lab equipment and network hardware.
- Successfully complete the Cisco practice professional certification exam.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

NETWORK AND WIRELESS TECHNOLOGIES

Network Engineer Certificate (G)

This career curriculum prepares technically skilled individuals in network engineering and administration. Graduates complete a comprehensive program preparing them for positions involving client needs assessment, network design, network installation and maintenance, internetwork communication and connectivity, specialized network functions, and on-site network administration. Extensive classroom work and lab experience—mirroring real-world production network scenarios—augment academic instruction. This curriculum helps prepare students for the CompTIA A+, CompTIA Network+, CompTIA Security+, Microsoft Certified Professional (MCP), Microsoft Certified Systems Administrator (MCSA), and/or Cisco Certified Network Associate (CCNA) certification exams. Completion of courses leading to the award of the network engineer certificate include 36–37 credit hours of courses, with 30–31 required credits and 6 credits of selected electives that meet the program specifications.

PROGRAM OUTCOMES FOR THE NETWORK ENGINEER CERTIFICATE

Upon completion of this program a student will be able to:

- Demonstrate problem solving that employs technical skills and comprehension of either networking or Microsoft Windows systems with application to current industry.
- Demonstrate solid foundation skills and competency in a range of either networking or Microsoft Windows systems techniques.
- Demonstrate ability, verbally and in writing, to think critically and analyze either network or Microsoft Windows systems structures.
- Demonstrate constructive, organized work habits.
- Demonstrate safe practices in the use of either networking or Microsoft Windows systems media and equipment.

PROGRAM REQUIREMENTS

CMSC	243	Systems Analysis and Design	3
CMSC	140	Introduction to Programming	3
NWIT	127	Microcomputer Control Programs	3
NWIT	140	Microcomputer Configuration and Installation	3
NWIT	151	Introduction to Networking	3
NWIT	170	Network Operating Systems	3

ELECTIVES (SELECT 6 CREDITS)

CMSC	250	UNIX/LINUX Operating System	3
NWIT	173	Network Security	3
NWIT	200	Microsoft Windows Client Operating System	3
NWIT	203	Microsoft Windows Server	3
NWIT	204	Supporting Microsoft Windows Network Infrastructure	3
NWIT	205	Implementing and Administering Microsoft Windows Directory Services	3
NWIT	252	Cisco Networking 2	3
NWIT	253	Cisco Networking 3	3
NWIT	254	Cisco Networking 4	3
NWIT	255	Cisco Advanced Routing	6

MICROSOFT WINDOWS SYSTEM ADMINISTRATOR (MCSA) TRACK: 215A

NWIT	200	Microsoft Windows Client Operating System	3
NWIT	203	Microsoft Windows Server	3
NWIT	204	Supporting Microsoft Windows Network Infrastructure	3
NWIT	205	Implementing and Administering Microsoft Windows Directory Services	3

CISCO CERTIFIED NETWORK ASSOCIATE (CCNA) TRACK: 215B

NWIT	173	Network Security	3
NWIT	252	Cisco Networking 2	3
NWIT	253	Cisco Networking 3	3
NWIT	254	Cisco Networking 4	3

TOTAL CREDIT HOURS 36

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

NETWORK AND WIRELESS TECHNOLOGIES

Network Engineer Certificate (G) *(continued)*

PROGRAM OUTCOMES FOR THE CCNA TRACK

Upon completion of this program a student will be able to:

- Demonstrate problem solving that employs technical skills and comprehension of networking with application to current industry.
- Demonstrate solid foundation skills and competency in a range of networking techniques.
- Demonstrate ability, verbally, and in writing, to think critically and analyze network structures.
- Demonstrate constructive, organized work habits.
- Demonstrate safe practices in the use of network media and equipment.
- Complete the AAS program with the necessary courses to facilitate employment in the networking industry.

Wireless Technologies Certificate (G): 227

This curriculum, incorporating basic electronics and digital electronic devices and communication systems, prepares students to enter the wireless communication systems field. It also provides a foundation in cellular theory and construction of wireless communication systems. The student may also elect to apply all of these credits toward completion of the AAS.

NWIT	101	Introduction to Wireless Technologies	3
NWIT	150	Electronics for Wireless	4
NWIT	173	Network Security	3
NWIT	229	Wireless Communications	4
NWIT	274	Advanced Wireless Communications	4
NWIT	275	Wireless Security	3

TOTAL CREDIT HOURS 21

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate problem-solving skills that incorporate the technical aspects of wireless communications.
- Understand cellular theory and construction of wireless communication systems used in the mass communications field.
- Demonstrate preparedness in the area of mobile and wireless data communications.
- Demonstrate technical proficiency using basic electronics and digital devices.
- Demonstrate proficiency with different communication systems.
- Demonstrate planning and preparation skills for efficient execution of technical procedures.

NURSING

Nursing AS (TP/SS)

Students who plan to major in nursing will be assigned the temporary major of pre-nursing, with POS code 570, until they are officially admitted to the nursing program. Students may take preparatory courses and courses that fulfill general education requirements during the waiting period. As an alternative to being assigned a temporary major, students waiting for admission to the nursing program may choose to major in general studies or any other open-admission program. The Admissions and Records Office at Takoma Park/Silver Spring will assign a matriculated code once students are admitted to the nursing program.

The basic nursing curriculum covers two academic years, is approved by the Maryland Board of Nursing, and is accredited by the National League for Nursing Accrediting Commission. Upon successful completion of the curriculum, the graduate is granted the AS in nursing and is eligible to take the state board examination for registered nurse licensure. Graduates will be prepared to give competent nursing care to patients in hospitals, nursing homes, and other comparable health agencies under the supervision of more experienced practitioners and, with appropriate experience and further preparation, should be able to assume increasing responsibility in nursing. Hospitals, nursing homes, and other health agencies within the metropolitan area will provide the settings for a variety of clinical experiences, which are planned as a vital part of each nursing course.

In addition to the scholastic standards required of all students in the College, nursing students are required to achieve a grade of C or better in mathematics foundation, BIOL 210, BIOL 212, and BIOL 213, and each nursing course in order to continue in the program.

The nursing curriculum depends on proper sequencing of courses. All non-nursing courses in the curriculum, with the exception of the arts and humanities distribution courses, are to be completed prior to or during the semester in which they are listed.

This is a selective program with specific admissions requirements. Applications should be received in the Admissions Office by April 1 for fall semester and by August 1 for spring semester. For additional information, contact the Admissions and Records Office at the Takoma Park/Silver Spring Campus, 240-567-1501, or the program department.

After acceptance into the nursing program, all students must obtain current CPR certification for "Healthcare Provider" or "Professional Rescuer" as well as a TB test or chest X-ray showing no evidence of tubercular disease. Clinical agencies require documented evidence (titers) of immunity to measles, mumps, rubella, and hepatitis B (immunization series may be in progress with titer obtained at its conclusion). In addition, knowledge of varicella (chicken pox) immune status by blood titer is required.

A suggested course sequence for full-time students follows; part-time students should consult an adviser.

(Continued)

NURSING

Nursing AS (TP/SS) *(continued)*

GENERAL EDUCATION REQUIREMENTS

Foundation Courses

English foundation 3
Mathematics foundation 3–4

Distribution Courses

Arts distribution 3
Humanities 3
PYSC 102 General Psychology *(BSSD)*
or
PYSC 203 Human Growth and Development during the Life Span 3
*Sociology course (BSSD)** 3
BIOL 212 Human Anatomy and Physiology I (NSLD) 4
BIOL 213 Human Anatomy and Physiology II (NSLD) 4

PROGRAM REQUIREMENTS

BIOL 150 Principles of Biology I† 4
BIOL 210 Microbiology 4
NURS 113 Fundamentals of Nursing 7
NURS 114 Professionalism and Communication in Nursing 1
NURS 121 Basic Health Assessment 1
NURS 125 Nursing in Health and Illness I 4
NURS 126 Nursing Care of Special Populations I: Geriatric and Psychiatric Nursing 4
NURS 129 Pathophysiology and Pharmacology in Nursing 2
NURS 205 Transition to Professional Nursing Practice 1
NURS 225 Nursing in Health and Illness II 4
NURS 226 Nursing Care of Special Populations II: Maternal / Child Nursing 5
NURS 240 Nursing in Health and Illness III 7

TOTAL CREDIT HOURS 66-70

* Any sociology that meets the BSSD requirement.
† BIOL 150, if needed for BIOL 210, BIOL 212, and BIOL 213.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Maintain legal, ethical, evidence-based, and professional standards in nursing.
- Utilize clinical reasoning in practice.
- Practice patient centered care.
- Demonstrate teamwork and collaboration.
- Effectively use current technology and informatics.
- Ensure a safe environment for patient, self, and others.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

PARALEGAL STUDIES

Paralegal Studies AAS (G, TP/SS): 341

This curriculum provides the student with the basic skills in legal research, legal writing, and legal interviewing. The student will learn to prepare and interpret legal documents and analyze procedures and processes. This curriculum is designed for those interested in a career in a law office as a paraprofessional. It is also designed for legal secretaries presently employed in attorney's offices who wish to improve their skills for career advancement. A legal assistant is a trained specialist who can manage a law office operation under the supervision of an attorney, relieving a practicing attorney of those routine components of managing legal cases that require knowledge of the legal process, and assisting the attorney with handling of complicated legal problems. The legal assistant also assists the attorney in legal research and in the design and development of new procedures, techniques, services, and processes for the law office. The legal assistant can also prepare and interpret legal documents and analyze procedural problems through the selection, compilation, and use of technical information from various legal references. Completion of all requirements for this curriculum will lead to the award of the AAS in paralegal studies. A suggested course sequence for full time students follows; part-time students should consult an adviser.

FIRST SEMESTER

CMAP	120	Introduction to Computer Applications	3
ENGL	101	Introduction to College Writing*	3
POLI	*101*	*American Government (BSSD)*	3
		Mathematics foundation	3
		Speech foundation	3

SECOND SEMESTER

BSAD	101	Introduction to Business	3
ENGL	*102*	*Critical Reading, Writing, and Research (ENGF)*	3
LGST	101	Introduction to the Legal System	3
LGST	102	Legal Research	3
LGST	103	Legal Writing	3
		Health foundation	1-3

THIRD SEMESTER

LGST	104	Interpersonal Communications, Legal Interviewing, and Investigating Techniques.	3
LGST	216	Real Property	3
LGST	218	Civil Litigation	3
		Arts or humanities distribution	3
		LGST elective or CCSJ 221	3

FOURTH SEMESTER

LGST	220	Drafting Wills and Probating Estates in Maryland.	3
		Behavioral and social sciences distribution	3
		Natural sciences distribution with lab	4
		LGST elective	6

TOTAL CREDIT HOURS 62

* ENGL 101 if needed for ENGL 102/103 or general elective.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Prepare, interpret, and draft legal documents.
- Analyze legal problems and procedures in at least three areas of substance laws.
- Perform legal research.
- Demonstrate knowledge of facts, evidence, and rules of law.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

PARALEGAL STUDIES

Paralegal Studies Certificate (G, TP/SS): 156

The curriculum provides the student with basic skills in legal research, legal writing, and legal interviewing techniques. Competency is developed in at least three areas of substantive law selected by the student.

PROGRAM REQUIREMENTS

ENGL	101	Introduction to College Writing	3
LGST	101	Introduction to the Legal System	3
LGST	102	Legal Research	3
LGST	103	Legal Writing*	3
LGST	104	Interpersonal Communications, Legal Interviewing, and Investigating Techniques	3

ELECTIVES (SELECT 3 COURSES)†

CCJS	221	Criminal Law	3
LGST	106	Ethics	3
LGST	210	Torts	3
LGST	211	Maryland Contract Law	3
LGST	212	Immigration Law	3
LGST	214	Domestic Relations	3
LGST	216	Real Property	3
LGST	218	Civil Litigation	3
LGST	220	Drafting Wills and Probating Estates in Maryland	3

TOTAL CREDIT HOURS 24

* A keyboarding skill of 35 wpm is required before enrolling in this course.
† Students may elect CCSJ 221 or any paralegal course above LGST 104.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Locate and interpret legal statutes.
- Locate and interpret legal cases.
- Draft simple legal documents.
- Interpret the legal concepts in three areas of substantive law.
- Interpret the concepts of procedural law.
- Interpret citations of the law.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

PARALEGAL STUDIES

Legal Analysis Letter of Recognition (G, TP/SS): 804

This sequence of three courses is designed for persons who wish to develop skills in legal analysis. To complete each course in this sequence, students must demonstrate skills in the following areas: identifying the kinds of law books and their components; using the various indexes and digests; evaluating the role of key facts in issue development; and organizing materials and writing them in a clear style. A grade of C or better is required in each course.

LGST	101	Introduction to the Legal System	3
LGST	102	Legal Research	3
LGST	103	Legal Writing	3

TOTAL CREDIT HOURS 9

Upon successful completion of this course of study, and application to the Admissions and Records Office, the letter of recognition in legal analysis will be issued by the chief enrollment services and financial aid officer.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Locate legal legislation.
- Locate legal cases.
- Draft simple legal documents.

PHOTOGRAPHY

Students in the photography curricula may pursue a course of study leading to the AAS or to one of four certificates. Students should consult departmental advisers in the Communications Arts Technologies department for assistance with course selection and program planning.

Photography AAS (R): 342

The photography curriculum is intended to prepare students for careers in photography—industrial, commercial, portrait, lab technician—and management of photographic services. The curriculum provides a balanced aesthetic and technical foundation for entry into the professional field or for further study. Completion of the curriculum requirements leads to the award of the AAS in photography.

A suggested course sequence for full-time students follows; part-time students should consult an adviser.

FIRST SEMESTER

ENGL	101	Introduction to College Writing*	3
GDES	116	Digital Tools for the Visual Arts	4
HLTH	*100*	*Principles of Healthier Living (HLHF)*	1
PHOT	*150*	*Photography I*	
		or	
PHOT	*161*	*Introduction to Digital Photography (ARTD)*	3
		Speech foundation	3

SECOND SEMESTER

PHOT	201	Photography II	4
PHOT	214	Photoshop for Graphics and Photography	4
		English foundation	3
		Mathematics foundation†	3

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

PHOTOGRAPHY

Photography AAS (R): 342 *(continued)*

THIRD SEMESTER

PHOT	265	Color Materials and Processes	.3
PHOT	210	Photojournalism	
		or	
PHOT	251	Portrait and Fashion Photography‡	.3
TVRA	134	Media Appreciation	.3
		Behavioral and social sciences distribution	.3
		Natural sciences distribution with lab	.4

FOURTH SEMESTER

GDES	218	Graphic Design for the Web	.4
PHOT	260	Black and White Materials and Processes	.3
PHOT	275	Business Practices and Portfolio Development	.3
PHOT	230	Advanced Image Editing and Correction	.4
PHOT	269	Special Photography Assignment	1-4
		Elective‡	.3

TOTAL CREDIT HOURS 62–63

* ENGL 101 if needed for ENGL 102/103 or general elective.
† MATH 115A suggested.
‡ Choice of electives must be approved by a photography adviser.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Utilize current digital imaging technology to produce photographic images for use in commercial or fine art applications while also demonstrating a technical and aesthetic understanding of historical film and print photography.
- Consciously employ complex aesthetic strategies in visual problem solving methodologies that utilize a wide variety of lighting applications for use in studio, architectural, fine art, and varied commercial environments.
- Pursue academic research that involves complex evaluations of photographic ideas and applications of commercial and/or fine art photographs for the purpose of designing and implementing a career development strategy appropriate to the student's desired field of expertise in photography.
- Create and implement complex production strategies that require interdisciplinary applications of image production. These interdisciplinary applications with photography may include television production, web design, or graphic design.

PHOTOGRAPHY

Electronic Photography Certificate (R): 193

This certificate curriculum is intended to upgrade skills for currently employed individuals or to provide new skills for a change in job specialization. It provides basic black-and-white and color photography skills, and techniques in electronic photography and digital imaging as they apply to the modern business of professional photography.

PHOT	150	Photography I	
		or	
PHOT	161	Introduction to Digital Photography	3
PHOT	214	Photoshop for Graphics and Photography	4
PHOT	201	Photography II	4
PHOT	230	Advanced Image Editing and Correction	4

TOTAL CREDIT HOURS 15

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Utilize current digital imaging technology for image capture and editing and advanced image output for both print and web applications to produce photographic images for use in commercial, fine art, or academic environments.
- Utilize a wide variety of lighting applications for use in studio, architectural, fine art, and varied commercial environments.
- Pursue academic research that involves evaluations of photographic ideas and applications for commercial and/or fine art purposes.
- Consciously employ aesthetic strategies as applications in visual problem-solving methodologies.

This program is not eligible for federal and state financial aid.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

PHOTOGRAPHY

Photographic Techniques Certificate (R): 194

This certificate curriculum is intended to upgrade skills for currently employed individuals or to provide new skills for a change in job specialization. It provides basic and advanced black-and-white and color photography skills, covering both the technology and image production used in professional photography.

PHOT 150 Photography I
or
PHOT 161 Introduction to Digital Photography . .3
PHOT 201 Photography II 4
PHOT 260 Black-and-White Materials and Processes 3
PHOT 265 Color Materials and Processes 3

TOTAL CREDIT HOURS 13

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Use traditional photographic techniques that include black-and-white film and print processing.
- Develop advanced testing methods for traditional film and print processes including the production of archival, black-and-white portfolios.
- Demonstrate advanced expertise with traditional camera formats that include medium- and large-format film cameras.
- Demonstrate advanced expertise in the development and execution of complex color strategies for use in commercial or fine art photographic applications.
- Create an advanced color image portfolio in either print or electronic form for use in commercial or fine art applications.
- Utilize a wide variety of lighting applications for use in studio, architectural, fine art, and varied commercial environments.

This program is not eligible for federal and state financial aid.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

PHOTOGRAPHY

Photography Master Certificate (R): 196

This certificate curriculum is intended to prepare students for careers in photography—industrial, commercial, portrait, lab technician—and management of photographic services. It provides a balanced aesthetic and technical foundation for entry into the professional field or for further study.

PHOT 150 Photography I
or
PHOT 161 Introduction to Digital Photography . . 3
PHOT 201 Photography II 4
PHOT 214 Photoshop for Graphics and Photography 4
PHOT 260 Black-and-White Materials and Processes 3
PHOT 265 Color Materials and Processes 3
PHOT 275 Business Practices and Portfolio Development. 3
PHOT electives* 9
Elective selected from art, computer applications, graphic design, physics, printing, or television/radio disciplines* 3

TOTAL CREDIT HOURS 32

* Choice of electives must be approved by a photography adviser.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Utilize current digital imaging technology to produce photographic images for use in commercial or academic applications.
- Use and/or understand traditional photographic applications that include film and print processes.
- Utilize a wide variety of lighting applications for use in studio, architectural, fine art, and varied commercial environments.
- Pursue academic research that involves complex evaluations of photographic ideas and applications for commercial and/or fine art purposes.
- Consciously employ complex aesthetic strategies as applications in visual problem-solving methodologies.
- Fully design and implement a business development strategy appropriate to the student's desired field of expertise in photography.
- Create and implement complex production strategies that require interdisciplinary applications of image production. These interdisciplinary applications with photography may include television production, web design, computer graphics, or gaming.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

PHOTOGRAPHY

Portrait, Fashion, and Photojournalism Certificate (R): 172

This certificate curriculum is intended to upgrade skills for currently employed individuals or to provide new skills for a change in job specialization. It provides basic black-and-white and color photography skills, and advanced skills in the photography of people in the photojournalism, portrait, fashion, and illustration professional fields of photography.

PHOT 150 Photography I
or
PHOT 161 Introduction to Digital Photography . .3
PHOT 201 Photography II 4
PHOT 210 Photojournalism 3
PHOT 251 Portrait and Fashion Photography 3

TOTAL CREDIT HOURS 13

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Utilize current digital imaging technology to produce photographic images for use in commercial, fine art, or academic applications.
- Utilize a wide variety of lighting applications for use in studio, architectural, fine art, and varied commercial environments.
- Design and create advanced photographic applications of narrative image sequencing for use in print media.
- Design and create advanced photographic applications that specifically address the needs of commercial and fine art portrait and fashion markets.
- Consciously employ complex aesthetic strategies as applications in visual problem-solving methodologies.

This program is not eligible for federal and state financial aid.

PHYSICAL EDUCATION

See Health Enhancement, Exercise Science, and Physical Education

PHYSICAL THERAPIST ASSISTANT

Physical Therapist Assistant AAS (TP/SS)

Students who plan to major in physical therapist assistant will be assigned the temporary major of pre-physical therapist assistant, with POS code 580, until they are officially admitted to the physical therapist assistant program. Students may take preparatory courses and courses that fulfill general education requirements during the waiting period. As an alternative to being assigned a temporary major, students waiting for admission to the physical therapist assistant program may choose to major in general studies or any other open-admission program. The Office of Records and Admissions at Takoma Park/Silver Spring will assign a matriculated code once students are admitted to the physical therapist assistant program.

The program provides a foundation for graduates to become highly skilled in providing patient services using physical therapy techniques under the supervision and direction of a licensed physical therapist in clinics, hospitals, and many other health care settings.

This is a selective program with specific admissions requirements. For additional information, contact the Office of Records and Admissions at the Takoma Park/Silver Spring Campus, 240-567-1501, or the program department.

Thirty to forty hours of volunteer experience in a physical therapy setting and completion of BIOL 212 Human Anatomy and Physiology I are recommended before entering the program. It is advised that students not hold full-time jobs during enrollment in the program because physical therapist assistant students are required to attend full-time clinical practicum experiences and professional activities.

Each physical therapy course adds to material offered in previous courses. Students in this curriculum are expected to achieve a grade of C or better in each course in the curriculum. Upon completion of the curriculum, the graduate will receive the AAS and will be eligible to take the National Licensing Exam for Physical Therapist Assistants.

A suggested course sequence for full-time students follows; part-time students should consult an adviser.

GENERAL EDUCATION REQUIREMENTS

Foundation Courses

		English foundation	3
		Mathematics foundation	3
		Speech foundation	3

Distribution Courses

		Arts or humanities distribution	3
PSYC	*102*	*General Psychology (BSSD)*	3
BIOL	*212*	*Human Anatomy and Physiology I (NSLD)**	4

PROGRAM REQUIREMENTS

BIOL	150	Principles of Biology	4
ENGL	101	Introduction to College Writing†	3
PHTH	101	Introduction to Physical Therapy	1
PHTH	102	Basic Health Skills for the Physical Therapist Assistant	2
PHTH	103	Therapeutic Procedures I	2
PHTH	104	Surface Anatomy, Palpation and Massage	2
PHTH	105	Kinesiology I	3
PHTH	106	Kinesiology II	2
PHTH	112	Pathology for the Physical Therapist Assistant	2
PHTH	113	Seminar I	1
PHTH	114	Seminar II	1
PHTH	116	Measures and Interventions for Clinical Problems I	2
PHTH	201	Medical Reporting for the Physical Therapist Assistant	2
PHTH	204	Neurophysiology and Motor Learning	2
PHTH	205	Seminar III	1
PHTH	206	Measures and Interventions for Clinical Problems II	3
PHTH	215	Seminar IV	1
PHTH	216	Measures and Interventions for Clinical Problems III	2
PHTH	220	Therapeutic Procedures II - Special Populations	2
PHTH	223	Clinical Practicum I	5
PHTH	224	Clinical Practicum II	7

TOTAL CREDIT HOURS 70

* BIOL 150 if needed for BIOL 212.
† ENGL 101, if needed for ENGL 102/103.

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

PHYSICAL THERAPIST ASSISTANT

Physical Therapist Assistant AAS (TP/SS) *(continued)*

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate the entry-level knowledge, clinical skills, and professional abilities of a physical therapist assistant..
- Design competent patient care under the direction and supervision of a licensed physical therapist, in an ethical, legal, safe, and effective manner in a variety of health care settings.
- Manage an effective transition from the educational program to a career as a licensed physical therapist assistant.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

POLYSOMNOGRAPHY

Polysomnography Technology Certificate (TP/SS)

Students who plan to get a certificate in polysomnography technology will be assigned the temporary major of POS code 535 until they are officially admitted to the polysomnography technology certificate program.

The polysomnography technology certificate program is designed for practicing polysomnography technicians, as well as individuals who would be filling entry-level positions in the field, who need to complete didactic studies and supervised clinical practice to meet the requirements of the Maryland State Legislature for licensure in the state of Maryland as a polysomnographic technologist. Graduates of the program will be eligible to apply for the Polysomnographic Certification exam administered by Board of Registered Polysomnographic Technologists and for licensure in the state of Maryland as a polysomnographic technologist.

CMAP	120	Introduction to Computer Applications	3
HINM	115	Medical Terminology I	2
HINM	116	Medical Terminology II	2
PSYC	102	General Psychology	3
POSM	101	Anatomy and Physiology for Polysomnography	4
POSM	102	Introduction to Polysomnography	3
POSM	103	Sleep Disorders	3
POSM	104	Polysomnography I	3
POSM	105	Clinical Practicum I	3
POSM	201	Polysomnography II	4
POSM	202	Clinical Practicum II	4

TOTAL CREDIT HOURS 34

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Explain the realm of polysomnography to the public.
- Use culturally appropriate therapeutic and professional communication techniques with patients and the health care team.
- Conduct polysomnographic studies in accordance with established legal and ethical guidelines.
- Apply knowledge of cardiopulmonary and neuromuscular anatomy and physiology while obtaining and reading polysomnograms.
- Explain human anatomy and physiology as it relates to sleep disorders and how sleep disorders affect anatomy and physiology.
- Apply knowledge of gas laws and electrical physics while obtaining and reading polysomnograms.
- Discuss the major sleep and arousal disorders based on age-specific criteria.
- Use knowledge of polysomnographic research to maintain currency in practice.
- Operate a variety of polysomnographic and ancillary equipment required for obtaining polysomnograms and providing therapeutic interventions.
- Adjust equipment for obtaining a polysomnogram with valid clinical data.
- Discriminate between the impact of pharmacological agents used to treat sleep disorders and those in common use that affect the polysomnogram.
- Apply standard age-specific criteria for scoring polysomnograms.
- Generate an accurate report that integrates abnormal physiological events and sleep stage scoring.
- Evaluate the patient's clinical presentation associated with specific sleep and arousal disorders for determination of appropriate protocols, testing parameters, procedures, and therapeutic interventions.

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

POLYSOMNOGRAPHY

Polysomnography Technology Certificate (TP/SS) *(continued)*

PROGRAM OUTCOMES *(continued)*

- Adapt polysomnographic procedures based on the patient's disease process; risk for infection; culture; and special physical, emotional, and cognitive needs.
- Prepare patients for all aspects of polysomnographic testing.
- Respond to patient needs during polysomnographic testing.
- Maintain patient safety at all times.

PRINTING MANAGEMENT

See Computer Publishing and Printing Management

RADIOLOGIC (X-RAY) TECHNOLOGY

Radiologic (X-Ray) Technology AAS (TP/SS)

Students who plan to major in radiologic (x-ray) technology will be assigned the temporary major of pre-radiologic (x-ray) technology, with POS code 520, until they are officially admitted to the radiologic (x-ray) technology program. Students may take preparatory courses and courses that fulfill general education requirements during the waiting period. As an alternative to being assigned a temporary major, students waiting for admission to the radiologic (x-ray) technology program may choose to major in general studies or any other open-admission program. The Admissions and Records Office at Takoma Park/Silver Spring will assign a matriculated code once students are admitted to the radiologic (x-ray) technology program.

This curriculum requires a minimum of two years of didactic and clinical experience. It offers a basic general education as well as an in-depth study of radiologic technology (including assessment of critical thinking skills) which is supported by extensive clinical experience. The program is accredited by the Joint Review Committee on Education in Radiologic Technology, and course objectives are mandated by the American Society of Radiologic Technologists (ARRT). Upon successful completion of the program, the graduate will receive the AAS and will be eligible to apply to take the certification examination given by the American Registry of Radiologic Technologists. Radiographers are eligible for employment in the radiology departments of hospitals, clinics, and doctors' offices. The curriculum has been designed to provide a transfer option for students who elect to continue studies beyond the AAS.

Each of the radiologic technology courses builds upon material offered in the previous course. A grade of C or better in each radiologic technology course must be achieved before advancing to the next semester or summer session.

This is a selective program with specific admissions requirements. For additional information, contact the Admissions Office at the Takoma Park Campus, 240-567-1501, or the program department.

(Continued)

RADIOLOGIC (X-RAY) TECHNOLOGY

Radiologic (X-Ray) Technology AAS (TP/SS) *(continued)*

GENERAL EDUCATION AND OTHER REQUIREMENTS

Foundation Courses

		English foundation	3
		Mathematics foundation	3
		Speech foundation	3

Distribution Courses

PSYC	*102*	*General Psychology (BSSD)*	3
BIOL	*212*	*Human Anatomy and Physiology I (NSLD)**	4

Other Requirements

ENGL	101	Introduction to College Writing†	3
BIOL	213	Human Anatomy and Physiology II	4
CMAP	120	Introduction to Computer Applications	3
HINM	115	Medical Terminology I	2

PROGRAM REQUIREMENTS

RADT	101	Radiologic Technology I	4
RADT	102	Radiologic Technology II	4
RADT	111	Radiographic Positioning I	3
RADT	112	Radiographic Positioning II	2
RADT	119	Clinical Radiology I‡	3
RADT	120	Clinical Radiology II**	3
RADT	124	Clinical Radiology III‡	3
RADT	125	Clinical Radiology IV‡	4
RADT	206	Radiologic Technology III‡	3
RADT	207	Radiologic Technology IV‡	3
RADT	211	Radiographic Positioning III	2
RADT	224	Clinical Radiology V‡	3
RADT	225	Clinical Radiology VI‡	3
RADT	240	Radiologic Technology V	2

TOTAL CREDIT HOURS 70

* Students should check the prerequisites for this course.
† ENGL 101, if needed for ENGL 102/103.
‡ New course number and new roman numeral designation.
** New clinical course.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Obtain success in the clinical and didactic component of the program based on an environment that promotes fair and equal educational opportunity.
- Use effective cognitive, affective, and psychomotor skills in the clinical site as a registered radiographer.
- Demonstrate through performance their competency in radiographic and patient care skills.
- Value and respect patient and peer diversity.
- Communicate effectively.
- Pass the ARRT national registry on the first attempt.
- Contribute to the health care field as a competent, ethical health care provider.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

SCIENCE

This curriculum provides the first two years of a typical four-year curriculum leading to a baccalaureate degree in a science- or mathematics-related field. Five tracks are available in the curriculum: chemistry and biochemistry, environmental science and policy, life science, mathematics, and physics. Within each track, completion of all requirements for this curriculum will lead to the award of the AS in science.

The curriculum is designed to provide academic flexibility in order to meet requirements of various transfer institutions. To identify appropriate courses for transfer, students should consult with the transfer institutions, use ARTSYS (transfer information maintained by the University of Maryland System for Maryland community college students at *http://artweb.usmd.edu*), and seek assistance from a counselor or adviser.

Chemistry and Biochemistry: 412D

Science AS

The chemistry and biochemistry track is a transfer program that provides the first two years of courses necessary for a four-year baccalaureate degree in chemistry or biochemistry.

FIRST SEMESTER

CHEM	*131*	*Principles of Chemistry (NSLD)*	4
ENGL	101	Introduction of College Writing	3
MATH	*181*	*Calculus I (MATF)*	4
		Health foundation	1
		Speech foundation	3

SECOND SEMESTER

BIOL	150	Principles of Biology I	4
CHEM	*132*	*Principles of Chemistry II (NSLD)*	4
ENGL	*102*	*Critical Reading, Writing, and Research (ENGF)*	3
MATH	182	Calculus II	4

THIRD SEMESTER

CHEM	203	Organic Chemistry I	5
PHYS	161	General Physics I	3
		Arts distribution	3
		*Behavioral and social sciences distribution**	3
		Mathematics and science program elective	1

FOURTH SEMESTER

CHEM	204	Organic Chemistry II	5
PHYS	262	General Physics II	4
		*Behavioral and social sciences distribution**	3
		Humanities distribution	3

TOTAL CREDIT HOURS 60

* The two behavioral and social sciences courses must be in different disciplines.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Apply knowledge of general and organic chemistry to analyze data, draw conclusions, and solve problems.
- Apply safe practices to execute laboratory techniques and use appropriate equipment and instrumentation to carry out experimental procedures.
- Access scientific information using basic scientific references and literature and evaluate technical information critically.
- Communicate in an ethical, clear and organized manner, scientific concepts, experimental results, and properly cited reference material.
- Work effectively in groups, as leaders or team members, to solve problems and interact productively with a diverse group of peers.
- Apply knowledge of general and organic chemistry to analyze data, draw conclusions, and solve problems.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

SCIENCE

Environmental Science and Policy: 412E

Science AS

The environmental science and policy track is a transfer program that provides the first two years of courses necessary for a four-year baccalaureate degree in environmental science or policy. Working closely with a counselor or adviser, students will be able to tailor their program of study to fit the needs of most, if not all, colleges and universities offering a degree in environmental science or environmental policy.

FIRST SEMESTER

ENGL	101	Introduction to College Writing
		or
		General elective or program elective*. . 3
CHEM	*101*	*Principles of Chemistry I (NSLD)* 4
MATH	*160*	*Elementary Applied Calculus (MATF)*
		or
MATH	*180*	*Precalculus (MATF)*
		or
MATH	*181*	*Calculus (MATF)*† 4
		Arts distribution 3
		Health foundation 1

SECOND SEMESTER

BIOL	*150*	*Principles of Biology (NSLD)*
		or
BIOL	*151*	*Principles of Biology II (NSLD)*. 4
		Behavioral and social sciences distribution‡ 3
		English foundation 3
		Humanities distribution 3
		Program elective. 3-4

THIRD SEMESTER

Behavioral and social sciences distribution‡ 3	
Program elective.	3-4
Program elective.	3-4
Program elective.	3-4

FOURTH SEMESTER

Speech foundation 3	
Program elective.	3-4
Program elective.	3-4
Program elective.	3-4
Program elective (if needed)	3-4

TOTAL CREDIT HOURS 60

* Take an additional program elective or general elective if ENGL 101 is not required for ENGL 102/103 English foundation.

† Mathematics: choose based on requirement of transfer institution(s).

‡ The two BSSD courses must come from two different disciplines. Select from any BSSD on the College's general education list and/or BSSD courses noted in the following program electives: ECON, GEOG and POLI, depending on transfer institution. Possible courses: BSAD 210 or MATH 117, BIOL 105, BIOL 106, BIOL 151, BIOL 210, BIOL 217, BIOL 220 or BIOL 222, BIOL 230, CHEM 132, CHEM 150, CHEM 203, CHEM 204, ECON 201, ECON 202, GEOG 101, GEOG 105, GEOG 124, GEOL 101, MATH 150, MATH 181, MATH 182, PHYS 161, PHYS 262 or PHYS 203, PHYS 204, POLI 101, POLI 203, POLI 211, POLI 242.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Make observations, collect data, and analyze data.
- Apply basic biological and chemical principles to explain experimental results.
- Describe connections between the environment and human societies, including how humans affect the environment and how the environment in turn affects human welfare.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

SCIENCE

Life Science: 412A

Science AS

The life science track is a transfer program that provides the first two years of courses necessary for a four-year baccalaureate degree in one of the life sciences. Working closely with a counselor or adviser, students will be able to tailor their program of study to fit the needs of most, if not all, colleges and universities offering a degree in biology or the biological sciences. Also, students planning to transfer to a four-year institution prior to attending medical, dental, veterinary, physical therapy, podiatry, or chiropractic school will find all or most of the prerequisite courses needed for admission to these professional schools. Finally, students planning to transfer to pharmacy, medical technology, or optometry school programs that accept students after two years of undergraduate education will find all the courses needed for admission into these programs.

Students are strongly advised to work closely with a biology or chemistry faculty member or an academic transfer counselor in order to select courses that will prevent or minimize the loss of credits upon transfer.

FIRST SEMESTER

CHEM	*131*	*Principles of Chemistry I (NSLD)*	4
MATH	*165*	*Precalculus (MATF)*	
		or	
MATH	*181*	*Calculus (MATF)*	4
		*Behavioral and social sciences distribution**	3
		English foundation	3
		Health foundation	1

SECOND SEMESTER

BIOL	*150*	*Principles of Biology I (NSLD)*	4
CHEM	132	Principles of Chemistry II	4
		Arts distribution	3
		Humanities distribution	3
		Program elective†	3

THIRD SEMESTER

BIOL	151	Principles of Biology II	4
		Speech foundation	3
		Program elective†	4
		Program elective†	4-5

FOURTH SEMESTER

BIOL	220	General Genetics	
		or	
BIOL	222	Principles of Genetics‡	4
		*Behavioral and social sciences distribution**	3
		Program elective†	4
		Program elective†	4
		Program elective†	4-5

TOTAL CREDIT HOURS 62–65

* The two BSSD courses must come from two different disciplines.

† Program electives: (Students are encouraged to speak with their transfer institution when selecting electives. It is recommended that in a 2 semester chemistry sequence, both courses be taken at the same institution, e.g. CHEM 203 & CHEM 204.) BIOL 210, BIOL 212, BIOL 213, BIOL 217, BIOL 226, BIOL 228, BIOL 230; CHEM 203, CHEM 204, ENGL 101, MATH 182, PHYS 161, PHYS 203, PHYS 204, PHYS 233, PHYS 234, PHYS 262, PHYS 263, SCIR 297

‡ Students planning to transfer to UMCP, UMBC or USG should take BIOL 222.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify, describe, and explain basic biological concepts
- Use an interdisciplinary approach to explain and solve life science concepts (from knowledge learned in biological, chemical, and physical sciences and mathematics).
- Utilize the scientific method to analyze problems in the life sciences.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

SCIENCE

Mathematics: 412B

Science AS

The mathematics track is a transfer program that provides the first two years of courses necessary for a four-year baccalaureate degree in mathematics.

FIRST SEMESTER

ENGL	101	Introduction to College Writing (if needed or track elective) 3
MATH	*181*	*Calculus I (MATF)* 4
		Arts distribution 3
		*Behavioral and social sciences distribution** 3
		Humanities distribution 3

SECOND SEMESTER

		English foundation 3
MATH	182	Calculus II 4
		Natural sciences distribution with lab† . . .4
		Speech foundation 3
		*Behavioral and social sciences distribution** 3

THIRD SEMESTER

MATH	280	Multivariable Calculus 4
		Natural sciences distribution with lab† . . .4
		Track electives 6-8

FOURTH SEMESTER**

MATH	282	Differential Equations 3
MATH	284	Linear Algebra 4
		Health foundation 1
		Track electives (two courses)†† 6-8

TOTAL CREDIT HOURS 61–65

* The two BSSD courses must be in different disciplines.
† Students are strongly encouraged to take two consecutive lab sciences courses.
** Apply for the College's graduation after registering for fourth semester courses.
†† Students should choose electives carefully based on the requirements of their intended transfer institution. Students are encouraged to take a two-semester sequence of courses that fulfills their transfer goals.
Track Electives include: ACCT 221, ACCT 222, BIOL 150, BIOL 151, BIOL 210, CHEM 101, CHEM 102, CHEM 203, CHEM 204, CMSC 203, CMSC 140, ECON 201, ECON 202, ENGL 101, ENES 102, ENES 220, ENES 221, ENES 240, ENEE 140, PHYS 161, PHYS 262, or PHYS 263. Students must take at least one 200 level track elective.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Effectively communicate the concepts of single and multivariable calculus, differential equations, and linear algebra using appropriate mathematical language.
- Apply mathematical approaches from single and/or multivariable calculus, differential equations, and linear algebra to analyze and solve problems in mathematics and other disciplines.
- Appropriately use current mathematical software, such as Matlab or MAPLE, for tasks in multivariable calculus, differential equations, and/or linear algebra.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

SCIENCE

Physics: 412C
Science AS

The physics track is a transfer program that provides the first two years of courses necessary for a four-year baccalaureate degree in physics.

FIRST SEMESTER

CHEM	131	Principles of Chemistry I 4
ENGL	101	Introduction to College Writing* 3
MATH	*181*	*Calculus I (MATF)* 4
		Behavioral and social sciences distribution 3
		Speech foundation 3

SECOND SEMESTER

CHEM	132	Principles of Chemistry II. 4
MATH	182	Calculus II 4
PHYS	161	Mechanics and Heat 3
		English foundation 3

THIRD SEMESTER

MATH	280	Multivariable Calculus 4
MATH	282	Differential Equations 3
PHYS	*262*	*General Physics II (NSLD)* 4
		Arts distribution 3
		Health distribution 1

FOURTH SEMESTER

MATH	284	Linear Algebra 4
PHYS	*263*	*Waves, Optics, and Modern Physics (NSLD)* 4
		Behavioral and social sciences distribution 3
		Humanities distribution 3

TOTAL CREDIT HOURS 60

* ENGL 101 if needed for ENGL 102/103 or CMSC 226 or ENES 240.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Identify, formulate, and solve basic physics problems.
- Integrate natural sciences to build solid foundation in physics applications using appropriate mathematical skills.
- Use appropriate and varied computer application software in physics.
- Design, perform, collect, and analyze data for simple physics experiments using the scientific method.

SURGICAL TECHNOLOGY

Surgical Technology AAS (TP/SS)

Students who plan to major in surgical technology will be assigned the temporary major of pre-surgical technology, with POS code 590, until they are officially admitted to the surgical technology program. Students may take preparatory courses and courses that fulfill general education requirements during the waiting period. As an alternative to being assigned a temporary major, students waiting for admission to the surgical technology program may choose to major in general studies or any other open-admission program. The Admissions and Records Office at Takoma Park/Silver Spring will assign a matriculated code once students are admitted to the surgical technology program.

This curriculum is designed for those who wish to move into surgical technology careers or upgrade present surgical skills in this area. The certificate curriculum is designed to accommodate students who wish to enter the workforce earlier and/or those who have earned a degree in

(Continued)

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

SURGICAL TECHNOLOGY

Surgical Technology AAS (TP/SS) *(continued)*

health science. The certificate can be completed in one or two years. Credits earned in the degree provide transfer options for students who choose to continue studies beyond the AAS admission requirements for the AAS and the certificate are the same.

The curriculum, emphasizing both didactic and clinical experience, offers a broad base of surgical skills needed by those who function as integral members of the surgical team. The program is accredited by the Commission on Accreditation of Allied Health Education Programs. Upon successful completion of the program, the graduate will receive the AAS and will be eligible to apply to take the certification examination given by the National Board of Surgical Technology and Surgical Assisting. Surgical technologists are eligible for employment in hospitals, operating rooms, physicians' offices, surgery centers, labor and delivery, and freestanding minor surgery facilities.

Each of the surgical technology courses builds on materials offered in the previous course. Students must meet prerequisites to the first-semester courses. A grade of C or better in each surgical technology course must be achieved.

For information regarding the program and admissions, please contact the Admissions and Records Office at the Takoma Park/Silver Spring Campus, 240-567-1501, or the program department.

GENERAL EDUCATION REQUIREMENTS

Foundation Courses

		English foundation	3
		Mathematics foundation	3
		Speech foundation	3

Distribution Courses

		Arts or humanities distribution	3
PSYC	*102*	*General Psychology I (BSSD)*	3
BIOL	*212*	*Human Anatomy and Physiology I (NSLD)**	4

PROGRAM REQUIREMENTS

BIOL	210	Microbiology	4
BIOL	213	Human Anatomy and Physiology II	4
ENGL	101	Introduction to College Writing†	3
HINM	115	Medical Terminology I	2
HINM	116	Medical Terminology II	2
SURG	100	Introduction Surgical Technology	4
SURG	101	Surgical Technology I	6
SURG	102	Surgical Technology II	6
SURG	201	Surgical Technology III	6
SURG	202	Clinical Practicum I	3
SURG	211	Surgical Technology IV	6
SURG	215	Clinical Practicum II	3

TOTAL CREDIT HOURS 68

* Students should check the prerequisite for BIOL 212.
† ENGL 101, if needed for ENGL 102/103.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate expertise in the theory and application of sterile and aseptic technique.
- Demonstrate appropriate interpersonal and communication skills.
- Maximize patient safety by facilitating a safe surgical environment.
- Perform competently in the scrub and circulator role in accordance with AST standards.
- Apply principles of pharmacology as related to the surgical technologist.
- Demonstrate critical thinking skills in perioperative procedural management.
- Demonstrate cultural competence.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

TEACHER EDUCATION

See Education

TECHNICAL WRITING

Technical Writing Certificate (G): 143

Statewide Program

This certificate curriculum is designed for those already employed in technical positions or in related positions seeking to move into careers in technical writing and editing, or to upgrade skills in these areas. The emphasis is on tools, techniques, and procedures for developing, preparing, and producing technical documents and presentations in a work environment. Those without appropriate background must obtain the consent of an adviser before enrolling in the curriculum.

GDES	120	Introduction to Digital Arts	4
		CMAP or CMSC elective	3
ENGL	101	Introduction to College Writing	3
ENGL	103	Critical Reading, Writing and Research in the Workplace	3
ENGL	110	Principles of English Grammar	3
ENGL	258	Techniques of Proofreading and Editing	3
ENGL	259	Organization and Development of Technical Documents	3
MGMT	101	Principles of Management	
		or	
MGMT	211	Introduction to Marketing	
		or	
MGMT	220	Organizational Behavior	3
COMM	112	Business and Professional Speech Communication	3

TOTAL CREDIT HOURS 28

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Write clearly for different audiences.
- Edit documents for correctness and consistency.
- Edit documents using sound grammar.
- Plan documents, including the budgeting and scheduling of them.
- Learn what is taught in a computer class.
- Plan, deliver, and critique speeches common in business and industry.
- Implement basic principles of management or marketing that are common in business and industry.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

THEATRE

The theatre curricula are planned to provide a fundamental course of study and training in basic skills for students who plan to continue study at a four-year institution, expect to enter a professional training program in theatre or dance, or wish to seek professional employment in theatre, dance, or related areas. Three tracks are offered: dance, theatre performance, and theatre technical. Completion of all requirements for any one of the tracks will lead to the award of the AA in arts and sciences.

Dance (R): 128

Arts and Sciences AA

This track is offered for the student who plans to transfer to a four-year institution to study for a baccalaureate degree with a major in dance or plans to seek a career in dance, musical theatre, or a dance-related field after completing this program.

A suggested course sequence for full-time students follows; part-time students should consult an adviser.

FIRST SEMESTER

DANC	*100*	*Introduction to Dance (ARTD)*	.3
DANC	101–107	Ballet I – Tap Dance I*	2-3
ENGL	101	Introduction to College Writing†	.3
PHED	101–199	PE elective	.2
THET	122	Performance Production	.1
		Health foundation	.1
		Mathematics foundation	.3

SECOND SEMESTER

DANC	101–107	Ballet I – Tap Dance I	2-3
DANC	120	Rhythmic Training for the Dancer	.2
THET	122	Performance Production	.1
		English foundation	.3
		Natural science distribution with lab	.4
		DANC elective	.3

THIRD SEMESTER

DANC	200	Introduction to Dance Composition	.3
DANC	201–207	Ballet III – Tap Dance II	.3
THET	122	Performance Production‡	.1
		Behavioral and social sciences distribution	.3
		Humanities distribution	.3
		DANC elective**	.3

FOURTH SEMESTER

COMM	108	Introduction to Human Communication	.3
DANC	201–207	Ballet III – Tap Dance I.	.3
THET	205	Movement for the Performer	.3
		Arts or humanities distribution	.3
		Behavioral and social sciences distribution	.3
		Natural sciences distribution	.3

TOTAL CREDIT HOURS 63–64

* At least three credits, elementary level or higher, must be taken in each area: ballet, modern dance, and jazz.
† ENGL 101, if needed, for ENGL 102/103 or general elective.
‡ Course is repeated three times for credit.
** Any course in dance, speech, or theatre not already required in the option may be taken to fulfill the dance elective. MUSC 108 may also be acceptable.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate an understanding of dance as a performing art and a cultural form through performance, choreography, and written and oral work based in history, anthropology, and aesthetics.
- Demonstrate second-year (intermediate) level mastery of a variety of dance techniques, including ballet, modern dance, and jazz dance through performance and journal-keeping.
- Demonstrate an understanding of basic rhythmic and composition concepts through choreography and performance.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

THEATRE

Theatre Performance (R): 011

Arts and Sciences AA

This track is offered for the student who plans to transfer to a four-year institution to study for a baccalaureate degree with a major in theatre or plans to seek a professional career in theatre after completing this program.

A suggested course sequence for full-time students follows; part-time students should consult an adviser.

FIRST SEMESTER

ENGL	101	Introduction to College Writing*	3
THET	*100*	*Introduction to Theatre (ARTD)*	3
THET	*110*	*Fundamentals of Acting*	3
THET	114	Stagecraft I	3
		Behavioral and social sciences distribution	3
		Mathematics foundation	3

SECOND SEMESTER

COMM	*108*	*Introduction to Human Communication (SPCF)*	3
THET	122	Performance Production	1
THET	201	Intermediate Acting	3
THET	205	Movement for the Performer	3
		English foundation	3
		Natural sciences distribution with lab	4

THIRD SEMESTER

COMM	109	Voice and Diction	3
MUSC	137	Class Voice	2
THET	122	Performance Production	1
THET	225	Acting for Television and Film	3
		Health foundation	1
		Humanities distribution	3
		Natural sciences distribution	3

FOURTH SEMESTER

THET	237	Fundamentals of Play Directing	3
THET	122	Performance Production†	1
		Behavioral and social sciences distribution	3
		Dance or physical education elective‡	3
		Technical theatre elective**	3

TOTAL CREDIT HOURS 64

* ENGL 101, if needed, for ENGL 102/103.
† Course is repeated three times for credit.
‡ Students may select dance or physical education courses for a total of three semester hours.
** Select THET 116 or THET 208.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate a competency for script and character analysis.
- Demonstrate a familiarity with periods, genres, and styles in theatre history.
- Demonstrate the ability to recognize and utilize the special vocabulary of theatre.
- Demonstrate the ability to create and/or construct and present formal and informal public performances.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

THEATRE

Theatre Technical (R): 014

Arts and Sciences AA

This track is offered for the student who plans to transfer to a four-year institution to study for a baccalaureate degree with a major in a technical theatre area or plans to seek a professional career in a technical theatre area after completing this program.

A suggested course sequence for full-time students follows; part-time students should consult an adviser.

FIRST SEMSTER

COMM	*108*	*Introduction to Human Communications (SPCF)*	3
ENGL	101	Introduction to College Writing*	3
THET	*100*	*Introduction to Theatre*	3
THET	114	Stagecraft I	3
		Health foundation	1
		Mathematics foundation	3

SECOND SEMESTER

THET	*110*	*Fundamentals of Acting (ARTD)*	3
		English foundation	3
		Natural sciences distribution with lab	4
		Physical education elective†	1
		Technical major elective	3
		Technical theatre elective	3

THIRD SEMESTER

THET	122	Performance Production‡	1
		Behavioral and social sciences distribution	3
		Humanities distribution	3
		Natural sciences distribution	3
		Physical education elective†	1
		Technical theatre elective	3

FOURTH SEMESTER

THET	237	Fundamentals of Directing	3
THET	122	Performance Production‡	1
		Behavioral and social sciences distribution	3
		Physical education elective†	1
		Technical theatre elective	6

TOTAL CREDIT HOURS 64

* ENGL 101, if needed, for ENGL 102/103 or general elective.
† Students may select dance or physical education courses for a total of three semester hours.
‡ Course is repeated twice for credit.
** Select ARTT 101–108, ARTT 127, ARTT 215, TVRA 120, or TVRA 125.
††Select THET 216, THET 230, or THET 208.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate a competency in technical theatre theory and practices in the subject area of stagecraft, costuming, lighting, painting, or makeup.
- Demonstrate the ability to create and/or construct and present formal and informal public display or review.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

TRANSFER STUDIES

Transfer Studies Certificate: 234

This certificate is designed for students who intend to transfer to a four-year college or university. Students should meet with a counselor or adviser to select appropriate courses required by the transfer institution(s) of interest.

GENERAL EDUCATION REQUIREMENTS

Foundation Courses

English foundation 3
Mathematics foundation 3

Distribution Courses

Arts distribution 3
Behavioral and social sciences distribution . . 3
Humanities distribution 3
Natural sciences distribution with lab 4

PROGRAM REQUIREMENTS

Electives* 11

TOTAL CREDIT HOURS 30

* Meet with a counselor or adviser to choose elective courses to fulfill additional General Education requirements and/ or academic major requirements of the transfer institution(s). ENGL 101 may be used as elective credit for this certificate.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate general education competencies.
- Describe a connection between elective choices and his or her academic goals.
- Transfer to any four-year Maryland public institution and many private or out-of-state colleges and universities, having satisfied half of the basic (i.e., general education) lower-level requirements. This program is not eligible for federal and state financial aid.

This program is not eligible for federal and state financial aid.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

WEB CAREERS

Digital Media and Web Technology AAS

The digital media and web technology program is designed for the student who wishes to pursue a career or to continue studies in digital media and web development. This program teaches technologies involved in designing and developing user interfaces, websites, and web applications as well as mobile and web server programming. Students may focus their studies on user interface development, web development, or mobile development or take courses from some or all of the focus areas. The curriculum prepares students for a variety of entry and mid-level positions as user-interface developers, web developers, web designers, digital media, and multimedia specialists.

FIRST SEMESTER

ENGL	101	Introduction to College Writing*.....3
CMSC	100	Fundamentals of Programming
		or
CMSC	140	Introduction to Programming†.....2-3
		Arts or humanities distribution.....3
		Mathematics foundation.....3
		Speech foundation.....3

SECOND SEMESTER

CMAP	272	Professional Website Development....4
CMAP	125	Introduction to Flash.....4
		Behavioral and social sciences distribution.....3
		English foundation.....3
		Health foundation.....1

THIRD SEMESTER

CMAP	273	Advanced Professional Web Technologies.....3
CMAP	274	Web Content Management Systems and Strategies.....3
CMAP	276	JavaScript Fundamentals.....3
		Natural science distribution with lab.....4
		Elective‡.....3

FOURTH SEMESTER

CMAP	299	Web Certificate/Degree Portfolio.....3
		Electives.....12-16

TOTAL CREDIT HOURS 60–64

* ENGL 101, if needed for ENGL 102/103 or general elective.

† CMSC 100 is designed for students new to computer programming. Successful completion of CMSC 140 is necessary for Mobile Development courses.

‡ Electives: GDES 121, GDES 212, GDES 214, GDES 216, TVRA 110, CMAP 141, CMAP 240, CMAP 277, CMAP 278, CMAP 282, CMAP 288, CMSC 213, CMSC 214, CMSC 216, CMSC 261, CMSC 270. Please consult a digital media adviser before selecting courses.

PROGRAM OUTCOMES FOR DIGITAL MEDIA AND WEB TECHNOLOGY

Upon completion of this program a student will be able to:

- Demonstrate solid foundation skills and competency in a range of media, techniques, and knowledge of associated processes used in web and mobile development.
- Demonstrate currency and proficiency in the digital tools employed in web and mobile design and development.
- Create professional quality websites or mobile applications that comply with current web standards and are representative of the material and techniques studied.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

WEB CAREERS

Internet Games and Simulation Certificate (R): 232

See also Computer Gaming and Simulation AA

Computer web gaming and simulation are part of a rapidly growing and exciting new industry. This interdepartmental certificate presents students with an introduction to the skills needed to explore the emerging technology area of web game development. Completion of this certificate will expose students to core web development skills, introduce web gaming and computer simulation technology, and provide an introduction to computer graphics technology. Electives allow students an opportunity to further explore their particular area of interest.

PROGRAM REQUIREMENTS

CMAP	125	Introduction to Flash	4
CMAP	190	Introduction to Game and Simulation Development	4
CMAP	225	Flash ActionScript for Web Publishing and Gaming	4
CMAP	272	Professional Website Development	4
CMAP	273	Advanced Professional Web Technologies	3
GDES	120	Introduction to Digital Arts	4
GDES	140	Introduction to Animation	4
GDES	116	Digital Tools for the Visual Arts	4

ELECTIVES (TWO COURSES)

Design and animation electives:
GDES 214, GDES 218, GDES 240
PRNT 131, PRNT 232, TVRA 101

Programming and technical electives:
ENGL 103, CMAP 141, CMAP 290, CMAP 269
or CMSC 269, CMAP 276, CMAP 277,
CMAP 278, CMSC 140, CMSC 201 4–8

TOTAL CREDIT HOURS 35–39

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate working knowledge of analyzing, designing, and developing Internet-based games in a team environment.
- Create professional-quality web games using Flash and Action Script and place in an online portfolio.
- Create professional-quality websites that comply with current web standards.
- Demonstrate an understanding of the vocabulary of gaming and simulation.

WEB CAREERS

Java Developer Certificate: 250

This certificate is designed for students who want to receive training in developing object-oriented Java applications that will run on server and client systems. Students will be able to apply these courses toward a general studies, web careers, or information systems degree.

PROGRAM REQUIREMENTS

CMSC 201 Java Programming Language. 3
CMSC 214 Advanced Java Programming 3
CMSC 220 Client-Server Programming with Java 3

ELECTIVES (SELECT 3 COURSES, 7-10 CREDITS)

CMSC 140 Introduction to Programming
CMSC 234 Mobile Game and Application Programming
CMSC 243 System Analysis and Design
CMSC 246 Introduction to SQL using Oracle
CMSC 269 Computer Science and Technologies Internship

TOTAL CREDIT HOURS 16–19

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate working knowledge with Java programming language.
- Write GUI-based, object-oriented, event-driven, client-side Java programs using primitive data types, control structures, methods, arrays, classes, interfaces, inheritance, polymorphism, asynchronous event handling, and multi-threading.
- Build Java programs to connect to databases and manipulate database records.
- Develop networking programs using Remote Method Invocation and networking API.
- Create server-side programs using the web protocol, client-side interfaces, and server-side technologies such as Java Servlet and JavaServer Page.
- Implement Java games and applications to run on different devices.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

WEB CAREERS

Web Design Certificate (R): 229A

This certificate is designed to provide training, skills, and knowledge that prepare a student for employment as a member of a web development team. Skills include website management, advanced web design techniques using a variety of software, effective communication between web authors and system administrators, HTML validity, editorial responsibilities, and liaison with graphic artists and others.

PROGRAM REQUIREMENTS

CMAP	125	Introduction to Flash	4
CMAP	272	Professional Website Development	4
CMAP	299	Web Certificate/Degree Portfolio	3
CDES	116	Digital Tools for the Visual Arts	4
GDES	121	Fundamentals of Graphic Design I	3
GDES	214	Photoshop for Graphics and Photography	4
GDES	218	Graphic Design for the Web	4

ELECTIVES (SELECT ONE COURSE: 3-4 CREDITS)

ARTT	100	Introduction to Drawing
ARTT	102	Design Studio: 2-Dimensional
CMAP	225	Flash ActionScript for Web Publishing and Gaming
CMAP	273	Advanced Professional Web Technologies
CMAP	274	Web Content Management Systems and Strategy
CMAP	276	JavaScript Fundamentals
CMAP	278	Web Application Development Using ColdFusion
GDES	216	Illustrator for Vector Graphics
PHOT	161	Introduction to Digital Photography

TOTAL CREDIT HOURS 29

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate solid foundation skills and competency in a range of media, techniques, and knowledge of associated processes used in web design.
- Demonstrate visual problem solving that employs appropriate technical skills and techniques.
- Demonstrate the ability to express ideas and concepts creatively.
- Apply principles of design and typography to the processes employed in the graphic design, illustration, and web design industries.
- Demonstrate an understanding of the vocabulary of web design.
- Demonstrate the ability to present and critique concepts and designs.
- Demonstrate currency in the digital tools employed in website design and assembly.
- Create professional-quality websites that comply with current web standards.
- Develop a portfolio representative of the material and techniques studied, suitable for employment or transfer to another institution.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

WEB CAREERS

Web Development Certificate (G, R): 231A

This certificate is designed to provide training, skills, and knowledge that prepare a student for employment as a member of a web development team. Skills include website management, basic website design, effective communication between web authors and system administrators, HTML validity, editorial responsibilities, and liaison with graphic artists and others.

PROGRAM REQUIREMENTS

CMAP	125	Introduction to Flash	4
CMAP	242	Introduction to Database Applications	
		or	
CMSC	270	Introduction to SQL Using Oracle	3
CMAP	272	Professional Website Development	4
CMAP	273	Advanced Professional Web Technologies	3
CMAP	274	Web Content Management Systems and Strategy	3
CMAP	276	JavaScript Fundamentals	
		or	
CMAP	277	Advanced JavaScript	3
CMAP	278	Web Application Development Using ColdFusion	4
CMAP	288	Advanced Web Application Development Using ColdFusion	3
CMAP	299	Web Certificate/Degree Portfolio	3
GDES	116	Digital Tools for the Visual Arts	4

ELECTIVES (SELECT 1 COURSE)

BSAD	101	Introduction to Business	3
CMAP	225	Flash ActionScript for Web Publishing and Gaming	4
CMAP	245	Advanced Database Applications	3
CMAP	269	Computer Applications Internship	1-4
CMAP	276	JavaScript Fundamentals	3
CMAP	277	Advanced JavaScript	3
CMAP	282	Web Application Development Using PHP and MySQL	3
CMSC	140	Introduction to Programming	3
CMSC	201	Java Programming Language	3
CMSC	269	Computer Science and Technologies Internship	3
GDES	218	Graphic Design for the Web	4

TOTAL CREDIT HOURS 37–38

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Create valid XHTML webpages.
- Use an Integrated Development Environment (IDE) effectively.
- Create webpages incorporating the Cascading Style Sheets technology.
- Create webpages with dynamic content utilizing a web database technology.
- Create coherent and intuitive websites or web-enabled applications.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

WEB CAREERS

Web Programming Certificate: 230

This certificate is designed to provide training, skills, and knowledge that prepare a student for employment as a programmer on a web development team. Skills include advanced web programming languages (Java, Visual Basic, XML, DHTML/JavaScript, web databases), UNIX, and advanced HTML.

PROGRAM REQUIREMENTS

CMAP	142	Introduction to Database Applications
		or
CMSC	246	Introduction to SQL Using Oracle. 3
CMAP	272	Professional Website Development. . . .4
CMAP	273	Advanced Professional Web Technologies
		or
CMAP	276	JavaScript Fundamentals 3
CMAP	277	Advanced JavaScript 3
CMAP	278	Web Application Development Using ColdFusion 4
CMSC	140	Introduction to Programming 3
CMSC	201	Java Programming Language. 3
CMSC	214	Advanced Java Programming 3
CMSC	220	Client Server Programming with Java 3
CMSC	250	UNIX/LINUX Operating System. 3
GDES	116	Digital Tools for the Visual Arts
		or
CMAP	106	Computer Use and Management . . .3–4

ELECTIVES (SELECT 1 COURSE)

CMAP	225	Flash ActionScript for Web Publishing and Gaming
CMAP	245	Advanced Database Applications
CMAP	269	Computer Applications Internship
CMAP	274	Web Content Management Systems and Strategy
CMAP	282	Web Application Development Using PHP and MySQL
CMAP	288	Advanced Web Application Development Using ColdFusion
CMSC	226	Introduction to Object-Oriented Programming with C++
CMSC	260	Computer Security
CMSC	269	Computer Science and Technologies Internship 3

TOTAL CREDIT HOURS 38–39

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Create valid XHTML webpages.
- Write and use JavaScript in webpages.
- Use an Integrated Development Environment (IDE) such as the MX Studio 8 effectively.
- Create webpages incorporating the Cascading Style Sheets technology.
- Create webpages with dynamic content utilizing at least two web server application technologies.
- Create coherent and intuitive web-enabled applications.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

WOMEN'S STUDIES

Women's Studies Certificate 251

The women's studies certificate provides a solid foundation of coursework in the discipline. It provides students with the opportunity to specialize in Women's Studies in preparation for further work at a four-year institution, or for professional, personal, and academic opportunities. Students in the Certificate program must complete a minimum of 18 credits in women's studies-designated courses: WMST 101 Introduction to Women's Studies (3 credits), and 15 additional credits, including a Social Sciences course, a Humanities course, and a general elective.

WMST	101	Introduction to Women's Studies	3

Choose 15 credits from the list below including a Social Sciences course and a Humanities course

ENGL	208	Women in Literature	3
HIST	228	Women in the Western World	3
HIST	112	Women in World History	3
PHIL	212	Women in Philosophy I	3
PHIL	218	Women in Philosophy II	3
PSYC	207	Psychology of Women	3
SOCY	211	Introduction to Community Fieldwork	3
SOCY	110	Families in Crisis	3
SOCY	208	Sociology of Gender	3
SOCY	214	Sociology of the Family	3
SOCY	233	Race and Ethnic Relations	3
PHED	156	Self-Defense for Women	2
PHED	163	Weight Training Designs for Women	1
HLTH	215	Women's Health	3
MGMT	235	Managing Diversity in the Workplace	3
		WMST elective	3

TOTAL CREDITS 18

The Women's Studies Program also offers an array of Honors courses for qualified students: Women in Film (International Focus); Women in Victorian England; Women in Film (American Focus), and Women's Studies Museum Internship.

PROGRAM OUTCOMES

Upon completion of this program a student will be able to:

- Demonstrate a systematic knowledge of the history of women's movements and of multidisciplinary scholarship about women and gender.
- Describe how the application of a new "Women's Studies" gender lens has challenged traditional historical, cultural, and epistemological assumptions.
- Evaluate women's political, intellectual and cultural contributions in various realms (including literature, the visual arts, and music) on local, national and global levels.
- Form judgments about the structure and causes of women's roles in history from a global perspective.
- Assess theoretical approaches to gender studies as they are applied in various disciplines and theoretical "schools."
- Analyze the ways that systems of dominance, such as sexism and racism, have functioned, have changed, and how they continue to change.
- Explain why gender difference is fundamental to the construction of identity and the organization of human relations.
- Connect ideas across disciplines, compare theories with experiences, and contrast different academic, psychological, and social perspectives on gender.
- Recognize how an awareness of women's issues, women's history, and women's roles in society may positively affect the futures of transfer/graduate students (in all disciplines) and as professionals (in all professions).
- Form judgments about the significance of gender diversity and gender equity in local, national, and global arenas.

This program is not approved for federal or state student financial aid.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.

Course Descriptions

This section of the catalog describes courses normally offered by Montgomery College. Course descriptions typically include an overview of the course, any assessment levels and/or prerequisites required, and credit and contact hours. More detailed information about courses can be obtained from our academic departments.

The College reserves the right to revise descriptions and to withdraw from its offerings any curriculum or course in which registration is too small to justify instructional expenses.

Courses with hyphenated numbers are sequential and must be taken in the order listed. Separation of numbers by a comma indicates that the courses may be taken in reverse order.

A sample course description appears on page 265. This sample includes all of the elements of a typical course description, and an explanation is provided for each element.

Exploratory courses, which are listed in the schedule of classes but do not appear in the catalog, are credit courses introduced initially on a trial or pilot basis for a limited period of time. They provide students with an opportunity to explore changing disciplines, to learn from activities in a relatively new context, or to experience new types of instructional approaches. The transfer of credit for these courses is subject in each case to acceptance by the college or university to which the student is transferring.

Consult the schedule of classes for information regarding the courses offered at each campus and through Distance Education and Learning Technologies. Students may take courses offered on any campus to meet the requirements of the curriculum in which they are enrolled. Campus-specific courses, like all courses, may not be offered every semester or every year.

Assessment Levels

Montgomery College uses assessment tests to help students identify their level of English, reading, and mathematics skills—skills necessary for academic success. The Accuplacer is the assessment test used for native speakers of English; the ESL Accuplacer Test is used for non-native speakers of English. The College's assessment policies and required courses pertaining to the assessment tests are listed under Assessment Testing (Appropriate Course Placement) in the Admissions and Registration section of this catalog.

Most course descriptions for college-level courses list prerequisites or assessment levels for English or reading or mathematics. An assessment level for a particular course indicates which English, reading or mathematics courses students must be eligible to enroll in when they enroll in that course. Eligibility is determined through placement by the Accuplacer, acceptable scores of other test instruments (see below), transfer credit, or completion of courses that lead to the identified assessment levels. Non-native speakers of English who have taken the ESL Accuplacer and are enrolled in American English Language (AELR, AELS, AELW) courses should consult a counselor or adviser for required assessment levels.

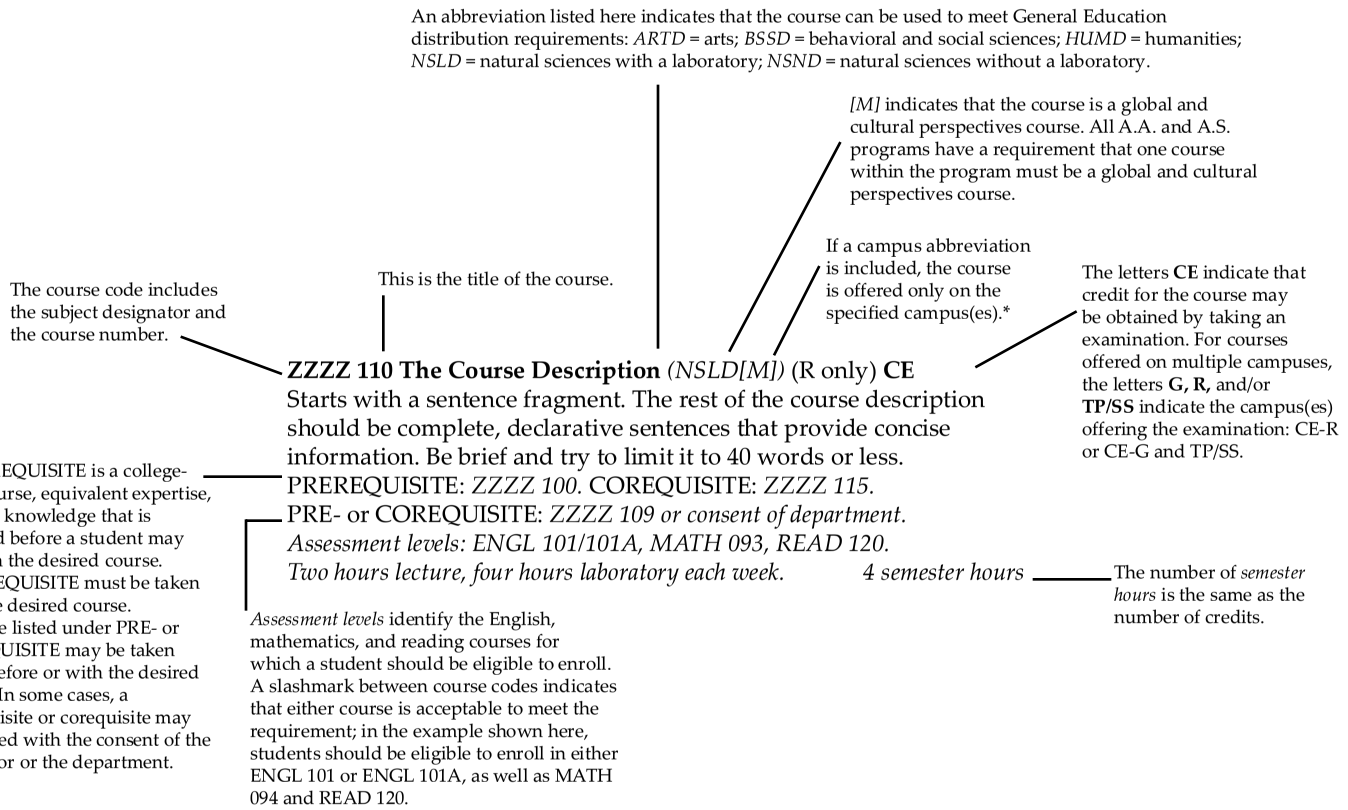
Students who have completed any of the following tests with the indicated scores should consult a counselor before taking an assessment test: SAT—550 verbal, 550 math (600 for MATH 165 or higher); ACT—24 or higher (26 or higher for MATH 165 or higher); TOEFL—575 or higher (231 or higher on the computerized version; 90 or higher on the Internet-based version); Advanced Placement—3, 4, or 5, depending on individual department requirements; CLEP general examination—50th percentile (except for MATH 165 or higher); CEEB Achievement Test—50 or higher.

Courses with no assessment levels or prerequisite listed are open to students who place into at least READ 095 or AELW 910. Enrollment in courses required through Appropriate Course Placement or the American English Language Program takes precedence over enrollment in other courses.

Course Designators

ACCT — Accounting ... 266
AELR — American English Language – Reading ... 267
AELS — American English Language – Speaking/Listening ... 268
AELW — American English Language – Writing ... 268
ANTH — Anthropology ... 269
AOSC — Meteorology ... 270
ARAB — Arabic ... 270
ARCH — Architectural Technology ... 270
ARTT — Art ... 272
ASLP — American Sign Language (ASL) ... 277
ASTR — Astronomy ... 280
AUTO — Automotive Technology ... 280
BIOL — Biological Sciences ... 282
BIOT — Biotechnology ... 285
BLDG — Building Trades Technology ... 286
BSAD — Business Administration ... 289
CCJS — Criminal Justice ... 289
CHEM — Chemistry ... 291
CHIN — Chinese ... 293
CMAP — Computer Applications ... 293
CMGT — Construction Management ... 296
CMSC — Computer Science and Technologies ... 298
COED — Cooperative Education ... 302
COMM — Speech ... 302
DANC — Dance ... 303
ECON — Economics ... 305
EDUC — Education ... 306
EMGT — Emergency Preparedness ... 311
ENEE — Electrical Engineering ... 313
ENES — Engineering Science ... 314
ENGL — English ... 315
FILM — Film ... 321
FIRE — Fire Science ... 322
FREN — French ... 324
GDES — Graphic Design ... 325
GEOG — Applied Geography ... 329
GEOL — Geology ... 331
GERM — German ... 331
GNDS — Gender Studies ... 332
HINM — Health Information Management ... 332
HIST — History ... 335
HLTH — Health ... 340
HMGT — Hospitality Management ... 343
HONR — Honors Program ... 345
HSCI — Health Sciences ... 347
IDES — Interior Design ... 347
ISTD — Interdisciplinary Studies ... 351
ITAL — Italian ... 352
JAPN — Japanese ... 352
KORA — Korean ... 352
LATN — Latin ... 353
LGST — Paralegal Studies (Legal Assistant) ... 353
LIBR — Library ... 355
LING — Linguistics ... 355
LNTP — Landscape Technology ... 355
MATH — Mathematics ... 358
MGMT — Management ... 361
MHLT — Mental Health ... 363
MUSC — Music ... 363
NURS — Nursing ... 368
NUTR — Nutrition and Food ... 370
NWIT — Network and Wireless Technologies ... 371
PHED — Physical Education ... 375
PHIL — Philosophy ... 381
PHOT — Photography ... 383
PHTH — Physical Therapist Assistant ... 385
PHYS — Physics ... 388
POLI — Political Science ... 390
PORT — Portugese ... 391
POSM — Polysomnography ... 391
PRNT — Printing Technology ... 392
PSCI — Physical Science ... 393
PSYC — Psychology ... 393
RADT — Radiologic (X-Ray) Technology ... 395
READ — Reading ... 398
RUSS — Russian ... 399
SCIR — Scientific Research ... 400
SOCY — Sociology ... 400
SONO — Diagnostic Medical Sonography ... 402
SPAN — Spanish ... 404
STBR — Study Abroad ... 406
STSU — Student Development ... 406
SURG — Surgical Technology ... 407
THET — Theatre ... 408
TVRA — Television/Radio ... 410
WMST — Women's Studies ... 412

Some courses or some individual sections require off-campus field trips, seminars, or service learning assignments where students are required to provide their own transportation. Check with faculty members teaching specific courses or sections for these requirements.



Catalog Entry Components

ACCT—Accounting

ACCT 221 Accounting I CE-R
An introduction to the principles and procedures related to accounting theory and practice from the perspective of users of financial information. Topics include the accounting cycle, the preparation and analysis of financial statements, and accounting information. PREREQUISITE*: Two units of high school mathematics or appropriate score on the College's assessment test. Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Four hours each week. Formerly AC 201.* *4 semester hours*

ACCT 222 Accounting II CE-R
The study and analysis of managerial accounting. Topics include cost accumulation, evaluation, and analysis for decision making, as well as coverage of the statement of cash flows and financial statement analysis. PREREQUISITE*: ACCT 221. Four hours each week. Formerly AC 202.* *4 semester hours*

ACCT 225 Governmental and Nonprofit Accounting
General principles of fund accounting for municipal, governmental, and nonprofit institutions. The course will emphasize fund principles, budgetary controls, and financial reporting statements. PREREQUISITE: *ACCT 222. Three hours each week. Formerly AC 210.* *3 semester hours*

ACCT 228 Ethics and Professionalism in Accounting
Provides an examination of the major ethical issues encountered by accountants in the business environment. The AICPA Code of Professional Conduct and the reasoning, philosophy, and application of that code are examined. PREREQUISITE: *ACCT 222 or consent of department. Three hours each week. Formerly AC 216.* *3 semester hours*

ACCT 231 Intermediate Accounting I
An overview of the financial accounting process with an in-depth study of cash, receivables, inventory costing, property, plant and equipment, intangible assets, and current liabilities. The course also includes an introduction to financial accounting research analysis. PREREQUISITE: *ACCT 222. Four hours each week. Formerly AC 207.* *4 semester hours*

ACCT 232 Intermediate Accounting II
Major topics include accounting for long-term liabilities, stockholders equity, earnings per share, investments, accounting for income taxes, pensions, leases, and statement of cash flows. The course also includes financial accounting research analysis. PREREQUISITE*: ACCT 231. Four hours each week. Formerly AC 208.* *4 semester hours*

ACCT 235 Cost Accounting
The study and analysis of cost accumulation and product costing procedures for both job order and process costing systems, absorption versus variable costing in manufacturing, activity-based costing, standard costing and performance, and relevant costs for decision making. Accounting for capital budgeting decisions and ethical challenges in managerial accounting are also covered. PREREQUISITE*: ACCT 222. Three hours each week. Formerly AC 217.* *3 semester hours*

ACCT 237 Federal Income Taxation I
A critical examination, analysis, and application of the tax law for individuals. Interrelated subjects include income inclusions and exclusions, property transactions, nontaxable exchanges, capital asset transactions, general deductions and losses, business expenses, depreciation and amortization, and passive activities. Attention is given to tax procedures, accounting and inventory methods, retirement planning, exemptions, credits, filing status, and the alternative minimum tax. Students also engage in both electronic research and return preparation practica. PREREQUISITE: *ACCT 222 or consent of department. Four hours each week. Formerly AC 213.* *4 semester hours*

ACCT 239 Business Finance
The study and analysis of the theories and applications that the financial manager uses in making decisions. Emphasis is placed on financial analysis, economic value added, cash flow analysis, profit planning, risk and return, security valuation, and capital budgeting analysis. Capital markets, working capital policy, current asset and liability management, financial structure, dividend policy, and internal financing are to be addressed. PREREQUISITE*: ACCT 222. Three hours each week. Formerly AC 219.* *3 semester hours*

ACCT 240 Auditing Theory and Practice
The study and analysis of fundamental components of auditing theory and risk, including inherent risk, control risk, and detection risk. Emphasis is placed on internal control procedures, risk assessment and examination of accounts. Additionally, the role of regulatory organizations and professional standards such as Generally Accepted Auditing Standards and Standards of the Public Company Accounting Oversight Board are discussed. PRE- or COREQUISITE: *ACCT 231 or consent of department. Four hours each week. Formerly AC 215.* *4 semester hours*

ACCT 245 Accounting Information Systems (R only)
Concepts and techniques of analyzing, designing, and implementing accounting information systems. Evaluation of computer- and non-computer-based information systems and software for organizations of various kinds. PREREQUISITE: *ACCT 231 or consent of department. Three hours each week. Formerly AC 230.* *3 semester hours*

ACCT 247 Federal Income Taxation II
A critical examination, analysis, and application of the tax law for Subchapter C and S corporations, limited liability companies, partnerships, estates and trusts. Attention is given to taxation of gifts, exclusions, net operating losses, determination of shareholder and partner basis, consolidated entities, book and income tax reconciliation, owner contributions and distributions, and beneficiary share of income. Students also engage in both electronic research and return preparation practica. PREREQUISITE: *ACCT 237. Four hours each week. Formerly AC 214.* *4 semester hours*

ACCT 249 Advanced Accounting
The study and analysis of accounting for business combinations. This course also includes accounting for partnerships, bankruptcy as well as the assembly, design, and interpretation of consolidated statements currently required by the SEC and the AICPA as well as other relevant bodies. A continuation of financial accounting research analysis is included. Other possible areas examined are the study of accounting for home and branch operations, foreign currency, and estates and trusts. PREREQUISITE*: ACCT 232 or consent of department. Three hours each week. Formerly AC 209.* *3 semester hours*

AELR—American English Language - Reading

AELR 910 Reading for Non-Native Speakers I
The first required course for American English Language Program (AELP) students in a sequence of three courses designed to teach academic reading of American English. Emphasis on beginning college skills required for success in college content courses, including vocabulary development, words in context, paragraph comprehension, test- and note-taking, and dictionary use. PREREQUISITE: *Placement by testing required by the College of non-native speakers of English. Additional laboratory required. For computation of tuition, this course is equivalent to 5 semester hours. Five hours each week. Formerly RD 101.* *No credit/No quality points*

AELR 920 Reading for Non-Native Speakers II
The second required course in the reading sequence for AELP students continues the teaching of academic reading of American English begun in the first course. Emphasis on intermediate college skills required for success in content courses, including vocabulary development, critical thinking, paragraph and essay comprehension, textbook and media analysis, test- and note-taking, and dictionary use. PREREQUISITE: *AELR 910 with a grade of C or better or placement by testing required by the College of non-native speakers of English. Additional laboratory required. For computation of tuition, this course is equivalent to 5 semester hours. Five hours each week. Formerly RD 102.* *No credit/No quality points*

AELR 930 Reading for Non-Native Speakers III
The third required course in the reading sequence for AELP students continues the teaching of academic reading of American English presented in the preceding two courses. Emphasis on the advanced college skills required for success in content courses, including advanced paragraph and essay comprehension, critical reading, textbook and media analysis, and rhetorical patterns. PREREQUISITE: *AELR 920 with a grade of C or better or placement by testing required by the College of non-native speakers of English. Additional laboratory required. For computation of tuition, this course is equivalent to 5 semester hours. Five hours each week. Formerly RD 103.* *No credit/No quality points*

AELS—American English Language - Speaking/Listening

AELS 910 American English Pronunciation, Speaking, and Listening Skills

An introductory course designed to enhance the speaking and listening skills of non-native English speakers. Emphasis is on pronunciation, stress, rhythm, and intonation patterns of American English. Oral communication, listening comprehension, and vocabulary development are stressed. Students build their skills through instruction and intensive practice. Placement by testing required by the College for non-native speakers of English. *Assessment levels: AELW 910, AELR 910. Additional laboratory required. For computation of tuition, this course is equivalent to 5 semester hours. Five hours each week. Formerly SP 102.*

No credit/No quality points

AELS 920 Spoken American English

Emphasizes the development and use of language skills necessary for understanding others and expressing oneself orally in American English in academic, professional, and social contexts. The course includes vocabulary development, practice with appropriate language structures, and discussion of important aspects of cross-cultural communication. PREREQUISITE: *AELS 910 with a grade of C or better or placement by testing required by the College for non-native speakers of English.* PRE- or COREQUISITES: *AELR 920 and AELW 920, or placement by testing required by the College for non-native speakers of English. Additional laboratory required. For computation of tuition, this course is equivalent to 5 semester hours. Five hours each week. Formerly EL 110.*

No credit/No quality points

AELS 930 Advanced Spoken American English

A course in advanced speaking and listening skills in English, with emphasis on presenting, comprehending, and responding to oral argument and other types of academic discourse. Within this framework, the course expands students' vocabulary in a variety of academic and professional fields and enhances note-taking skills. PREREQUISITE: *AELS 920 or placement by testing required by the College for non-native speakers of English.* PRE- or COREQUISITE: *AELR 930 or AELW 930, or placement by testing required by the College for non-native speakers of English. Additional laboratory required. For computation of tuition, this course is equivalent to 5 semester hours. Five hours each week. Formerly EL 111.*

No credit/No quality points

AELW—American English Language - Writing

AELW 910 American English Language I

The first course for American English Language Program (AELP) students in a sequence of four courses designed to teach academic writing of American English. Emphasis on parts of speech, basic sentence patterns, and appropriate use of verb tenses. PREREQUISITE: *Placement by testing required by the College of non-native speakers of English. Additional laboratory required. For computation of tuition, this course is equivalent to 5 semester hours. Five hours each week. Formerly EL 101.*

No credit/No quality points

AELW 920 American English Language II

The second course for AELP students in a sequence of four courses designed to teach academic writing of American English. Emphasis on appropriate use of a variety of sentence structures, complex verb forms, modifiers, and punctuation, and on the writing of sentences in context. PREREQUISITE: *AELW 910 with a grade of C or better or placement by testing required by the College of non-native speakers of English. Additional laboratory required. For computation of tuition, this course is equivalent to 5 semester hours. Five hours each week. Formerly EL 102.*

No credit/No quality points

AELW 930 American English Language III
The third course for AELP students in a sequence of four courses designed to teach academic writing of American English. Competence in writing unified and coherent paragraphs is developed through intensive grammar review and extensive composition exercises. PREREQUISITE: *AELW 920 with a grade of C or better or placement by testing required by the College of non-native speakers of English. Additional laboratory required. For computation of tuition, this course is equivalent to 5 semester hours. Five hours each week. Formerly EL 103.*
No credit/No quality points

AELW 940 American English Language IV
The fourth course for AELP students in a sequence of four courses designed to teach academic writing of American English. An advanced composition course for non-native speakers of English whose proficiency in English is substantial. Emphasis on the stages of the writing process including editing, revising, and the use of major patterns of organization. May not be taken as a substitute for ENGL 101 or ENGL 101A. PREREQUISITE: *AELW 930 with a grade of C or better or placement by testing required by the College for non-native speakers of English.* PRE- or COREQUISITES: *AELR 930 and AELS 920. Additional laboratory required. For computation of tuition, this course is equivalent to 5 semester hours. Five hours each week. Formerly EL 104.*
No credit/No quality points

ANTH—Anthropology

ANTH 201 Introduction to Sociocultural Anthropology *(BSSD[M])*
An exploration of fundamental anthropological concepts, methods, and theories used to interpret traditional and modern cultures. Emphasis is placed on the components of cultural systems and the investigation of the impact of globalization on changing cultures worldwide. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly AN 101.* *3 semester hours*

ANTH 215 Human Evolution and Archaeology *(NSND[M])* (G and R only)
An introduction to the theories and evidence concerning human's biological evolution and archaeology worldwide. Emphasis is placed on the genetic and adaptive evidence for human variation, the fossil evidence for human evolution, primatology, domestication, state societies, and archaeological methods and techniques. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly AN 105.* *3 semester hours*

ANTH 240 Introduction to Archaeology
An introduction to the discipline of archaeology. The course provides background to the development of archaeology as a science, various theoretical approaches, archaeological data and dating, and interpretation. The course also includes a survey of global prehistoric archaeological cultures. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly AN 110.* *3 semester hours*

ANTH 250 Archaeological Investigation (R only)
An introductory course in all aspects of the archaeological investigation. It covers research design and methods in field exploration, laboratory analysis and reporting, with the goal of interpreting the archaeological record and explaining past human behavior. PREREQUISITE: *ANTH 201, ANTH 215, or consent of department. One hour lecture, four hours laboratory each week. Formerly AN 202.*
3 semester hours

ANTH 256 World Cultures *(BSSD[M])* (G and R only)
An examination of one culture area in a particular geographic region using theories and methods of anthropology. The emphasis is on the prehistory, colonialism, cultural systems, modernization, and globalization of the region. Case studies are used to examine current conditions. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly AN 206.*
3 semester hours

ANTH 260 Independent Study Anthropology (G and R only)
A course designed to enable advanced students to pursue a topic of their own choosing with the guidance and supervision of an assigned faculty member. Topics should not duplicate any course topics already offered in the program. PREREQUISITES: *ANTH 201 or ANTH 215 or ANTH 240 and consent of department. Three hours lecture/discussion each week. Formerly AN 220.* *3 semester hours*

AOSC—Meteorology

AOSC 100 Weather and Climate *(NSND)*
Covers local and global weather phenomena. Topics include global and local energy budgets, geographic and seasonal variation, surface and upper air weather patterns, clouds and precipitation, catastrophic occurrences (snowstorms, thunderstorms, tornadoes, hurricanes, floods), and global climate change. Using real-time and archived web-based data, students analyze local and regional weather patterns and events. Students may receive credit for either AOSC 100 or AOSC 105, but not both. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly ME 100.* *3 semester hours*

AOSC 105 Meteorology: An Introduction to Weather *(NSLD)* (R only)
Designed to give students an understanding of important global and local weather events. Lectures explore the elements responsible for weather and climate. Individual topics include global and local energy budgets, geographic and seasonal variation, surface and upper air weather patterns, clouds and precipitation, catastrophic occurrences (snowstorms, thunderstorms, tornadoes, hurricanes, floods), and global climate change. In laboratories, students apply lecture concepts through use of weather instruments, interpret and analyze real-time and archived data and make their own forecasts. Students may receive credit for either AOSC 100 or AOSC 105, but not both. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment level: ENGL 101/101A. Three hours lecture, three hours laboratory each week. Formerly ME 101.*
4 semester hours

ARAB—Arabic

ARAB 101 Elementary Arabic I *(HUMD[M])*
A beginning language course focusing on the study of Modern Standard Arabic (MSA) language. Students begin to develop the ability to communicate in Arabic through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of Arabic is required. *In-class work is supplemented by 20 hours in the language learning laboratory. Five hours each week. Formerly AB 101.* *5 semester hours*

ARAB 102 Elementary Arabic II *(HUMD[M])*
A continuation of AB 101. Students continue their study of written language, conversation, and composition in Modern Standard Arabic (MSA) as they consider cultural themes, language functions, and authentic situations. *In-class work is supplemented by 20 hours in the language learning laboratory*. PREREQUISITE*: ARAB 101 or equivalent proficiency. Five hours each week. Formerly AB 102.*
5 semester hours

ARCH—Architectural Technology

ARCH 101 Introduction to Architecture and the Built Environment (R only)
An introduction to the architectural profession and the related fields of design and construction. An exploration of the impact of architecture within the built environment, including conservation and interior design issues; urban and regional planning; and construction implications. An examination of the entire building process and the legal, social, and cultural implications. *Assessment levels: ENGL 101/101A, MATH 098, READ 120. Three hours each week. Formerly CT 170.* *3 semester hours*

ARCH 103 Building Technology and Documentation (R only)
An in-depth examination of structural, surface, and detail elements of a building and its documentation. An introduction to drafting techniques of architectural and interior design spaces. A hands-on experience in which the student develops skills in the professional drafting standards, format and layout of drawings. *Assessment levels: ENGL 101/101A, MATH 110 or higher, READ 120. Two hours lecture, four hours laboratory each week. Formerly CT 181.* *3 semester hours*

ARCH 104 Introduction to Architectural Graphics (R only)
The study of the various visual communications methods most commonly used in the architectural profession. Techniques will include both color and black/white, a variety of perspective systems, shade/shadow, exploded views, pencil-and-pen work, and watercolor. PREREQUISITES: *ARCH 101 or IDES 101, and ARCH 103. Assessment levels: ENGL 101/101A, MATH 098, READ 120. Two hours lecture, four hours laboratory each week. Formerly CT 142.* *3 semester hours*

ARCH 183 CAD: Architectural Applications (R only)
Focuses on the mastering of computer aided drafting commands and drawing techniques for design professionals in the fields of architecture, design, and construction. Students create a series of drawings with the final assignment being a multi-page set of plans, elevations, and details. PREREQUISITE: *A grade of B or better in ARCH 103 or consent of department. Two hours lecture, four hours laboratory each week. Formerly CT 183.*
4 semester hours

ARCH 200 CAD: 3D Presentation (R only)
Development of skills and understanding of a variety of graphic software to utilize the computer as a tool for rendering and presentation. Three-dimensional design development is emphasized including perspective views, rendering scenes with materials and lighting and backgrounds, and presentation packaging. Students create a series of projects and create a portfolio of 3D architectural designs. PREREQUISITE: *ARCH 183 or consent of department. Two hours lecture, four hours laboratory each week. Formerly CT 223.* *4 semester hours*

ARCH 201 Introduction to Architectural Design (R only)
Introduces design principles and their application to architectural design. The course develops and strengthens problem-solving skills from conceptual, environmentally sensitive, and sociocultural points of view resulting in three-dimensional forms. Instruction emphasizes model making and presentation skills as they resolve architectural problems. PREREQUISITES: *ARCH 101, ARCH 104, and CMGT 100. Two hours lecture, four hours laboratory each week. Formerly CT 201.* *4 semester hours*

ARCH 202 CAD: REVIT I (R only)
Development of skills and understanding of a parametric computer drafting system based on construction components, elements, and types. Students will learn to create building models with building information modeling software (BIM), and students will use skills such as views, sheets, tagging and scheduling, annotating and dimensioning, and detailing. Final project will be a set of BIM documents based on residential and commercial structure. PREREQUISITE: *A grade of B or better in ARCH 103 or consent of department. Two hours lecture, four hours laboratory each week. Formerly CT 224.*
4 semester hours

ARCH 203 Principles of Sustainability (R only)
Fundamentals of sustainability in terms of the environment as a foundation for architectural design. Study of the various energy rating systems and exploration of the impact of architecture in terms of global environmental health, energy conservation concepts, and urban and regional planning. Topics include analysis of various mechanical and technical systems. Exploration of theories and practices of sustainable design with an actual building as students engage in hands-on experiences to analyze materials, systems, and construction methodology. *Assessment levels:* ENGL 002, READ 120. *Three hours each week. Formerly CT 203*
3 semester hours

ARCH 204 CAD: REVIT II (R only)
Advanced development of skills and understanding of BIM. Based on a basic proficiency in BIM, students will examine how to prepare solar studies, to create curtain wall systems, to design with massing tools, to utilize site and contour graphic tools, to work with project phasing, and to create more advanced building models. Students create a series of studies of a variety of building types. PREREQUISITE: *ARCH 202 or consent of department. Two hours lecture, four hours laboratory each week. Formerly CT 226.* *4 semester hours*

ARTT—Art

ARTT 100 Introduction to Drawing *(ARTD)*
An introduction to drawing and creative visual problem solving. Emphasis is on the analysis and exploration of basic drawing techniques in the visual interpretation of natural and fabricated forms. Students will be introduced to a variety of drawing media. *Two hours lecture, four hours studio each week. Formerly AR 101.* *3 semester hours*

ARTT 102 Design Studio: 2-Dimensional (ARTD)
An introduction to the elements and principles of visual expression with an emphasis on two-dimensional form. Students will explore a wide range of conceptual approaches and media to develop critical visual thinking and the capacity to engage in creative problem solving. An interdisciplinary, cross-cultural approach will be stressed to connect the formal and conceptual elements of visual expression within the context of both historical and contemporary visual culture. *Two hours lecture, four hours studio each week. Formerly AR 103.* *3 semester hours*

ARTT 103 Design Studio: 3-Dimensional
An introduction to the elements and principles of visual expression, with an emphasis on three-dimensional form. Students will develop the visual vocabulary, technical skills, and critical thinking necessary to engage in creative problem solving. Students will employ a wide range of formal and conceptual approaches, and media, in an exploration of the interaction between surface, form, space, and time. An interdisciplinary, cross-cultural approach will be utilized in introducing methods, materials and concepts of visual expression within the context of both historical and contemporary visual culture. *Two hours lecture, four hours studio each week. Formerly AR 104.*
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ARTT 105 Color Theory and Application *(ARTD)*
An introduction to the expressive, symbolic, decorative, and aesthetic aspects of color. Investigation of color theories and solutions to a variety of problems using color as a tool. *Two hours lecture, four hours studio each week. Formerly AR 105.*
3 semester hours

ARTT 112 Digital Photography for Fine Arts I *(ARTD)*
A general introduction to electronic still photography, beginning with traditional photographic and art concepts. Students will explore image manipulation using personal computers supported by scanners, photo CDs, and digital cameras. Students will use the most advanced photo editing software available to create new artistic images. *Two hours lecture, four hours laboratory each week. Formerly AR 112.* *3 semester hours*

ARTT 116 Digital Tools for the Visual Arts
(Credit cannot be received for both ARTT 116 and GDES 116).
An examination of the digital tools used in the visual arts. Students are exposed to the theory and function of the major software packages and basic digital design principles utilized in the visual arts. Topics include operating systems, typography, vector and bitmap imaging, page layout, PDF creation and editing, timeline-based video editing, file transfer, output, web, emerging technologies, and other material relative to the digital visual arts workflow. *Two hours lecture, four hours laboratory each week. Formerly AR 116.* *4 semester hours*

ARTT 120 Ceramics I *(ARTD)*
First of two related courses (with ARTT 220). The aesthetic and technical aspects of the ceramic process. Studio sessions will involve an exploration of the nature of clay, decorative processes, glazes, and firing via handbuilt pottery. A general survey of historical and contemporary ceramic art forms is included. Wheel-thrown pottery techniques are also introduced. Design and craftsmanship are emphasized. *Two hours lecture, four hours studio each week. Formerly AR 121.* *3 semester hours*

ARTT 123 Crafts *(ARTD)*
(R and TP/SS only)
A general survey of crafts such as metalry, weaving, enameling, ceramics, and textile design. The fundamental techniques and uses of various materials are explored. Design and craftsmanship are emphasized. *Course may be repeated for audit without limit. Two hours lecture, four hours studio each week. Formerly AR 123.* *3 semester hours*

ARTT 136 Art Appreciation
(Art in Culture) *(ARTD[M])*
An appreciation of the visual arts through an aesthetic understanding of the various art forms and their historical development throughout the world. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly AR 127.*
3 semester hours

ARTT 140 Museum Resources
Field trips to Washington, D.C. museums provide a working laboratory for this course, which exposes students to the basic issues of museology and the extraordinary range of resources available to them. The course involves museology issues, discussions of assigned field trips, appropriate readings, and the keeping of a journal. During field trips, the emphasis will be on visual experience for its own sake and value, so that students can become confident about individual encounters with works of art. *Assessment levels: ENGL 101/101A, READ 120. Two hours lecture/discussion, two hours laboratory each week. Formerly AR 110.*
3 semester hours

ARTT 152 Photographic Expression I
(ARTD)
Designed to achieve the basics of black-and-white still photographic techniques with additional emphasis on the development of ability to express and understand ideas and feelings communicated in photographs. Students are expected to supply own camera (35mm with manual controls), paper, and film. *One hour lecture, four hours laboratory each week. Formerly AR 203.* *3 semester hours*

ARTT 200 Art History: Ancient to 1400
(ARTD[M])
An introduction to architecture, painting, sculpture, and artifacts in Western civilization and around the world, from the Paleolithic inception of painting and sculpture through the Middle Ages, including prehistoric, Near Eastern, Egyptian, Aegean, Greek, Etruscan, Roman, Early Christian, Byzantine, Islamic, Indian, Chinese, Japanese, Pre-Columbian, Early Medieval, Romanesque, and Gothic art. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly AR 107.*
3 semester hours

ARTT 201 Art History: 1400 to Present
(ARTD[M])
A survey and analysis of major trends in architecture, painting, and sculpture in Western civilization, including Proto-Renaissance, Renaissance, Mannerist, Baroque, Neoclassic, Romantic, Realist, Impressionist, Expressionist, Cubist, nonobjective, and 20th century art. There are no prerequisites, but students are advised to take the history of art courses in sequence. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly AR 108.* *3 semester hours*

ARTT 204 Intermediate Drawing
A continuation of ARTT 100, with the further analysis and exploration of drawing skills, techniques, and concepts. Emphasis is on more complex problem solving in the visual interpretation of natural and fabricated forms. Students will utilize a variety of black-and-white and color drawing media. PREREQUISITE: *ARTT 100 or consent of department. Two hours lecture, four hours studio each week. Formerly AR 114.* *3 semester hours*

ARTT 205 Figure Drawing I
An introduction to figure drawing. Emphasis is placed on the problems involved in the visual interpretation of the human figure as a separate study, and in relation to its environment. Students will utilize a variety of drawing media. PREREQUISITE: *ARTT 100 or consent of department. Two hours lecture, four hours studio each week. Formerly AR 115.* *3 semester hours*

ARTT 206 Figure Drawing II
A continuation of ARTT 105, with further analysis and exploration of the concepts and techniques introduced in ARTT 205. Emphasis is placed on more complex problem solving in the visual interpretation of the human figure as a separate study and in relation to its environment. Students will use a variety of black-and-white and color drawing media. PREREQUISITE: *ARTT 205 or consent of department. Two hours lecture, four hours studio each week. Formerly AR 215.*
3 semester hours

ARTT 211 Painting I
An introductory studio course involving solutions to the problems related to the creation of representational, abstract, and non-objective paintings. Technical skills such as the ability to size and prime a canvas and to work in varied media are developed. Demonstrations, lectures, and class critiques will be employed. PREREQUISITES: *ARTT 100 and ARTT 102, or consent of department. Two hours lecture, four hours studio each week. Formerly AR 201.*
3 semester hours

ARTT 212 Painting II
A continuation of ARTT 211, with emphasis on solution to advanced problems related to the creation of representational, abstract, and non-objective paintings. Technical skills to work in varied media are developed. Demonstrations, lectures, and class critiques will be employed. PREREQUISITE: *ARTT 211 or consent of department. Two hours lecture, four hours studio each week. Formerly AR 202. 3 semester hours*

ARTT 213 Digital Photography for Fine Arts II
An advanced course that will enable students to use digital photography to create sophisticated, aesthetic images. The student will be encouraged to develop a personal style and technical proficiency for personal expression. PREREQUISITE: *ARTT 112 or consent of department. Two hours lecture, four hours laboratory each week. Formerly AR 113.*
3 semester hours

ARTT 215 Watercolor I (G and R only)
The use of transparent watercolor techniques and media with reference to historical and contemporary approaches. Painting in the studio and on location including still life, the figure in the environment, landscape, and architecture. Lectures and demonstrations with independent student responses required. PREREQUISITE: *ARTT 100 or consent of department. Course may be repeated for audit without limit. Two hours lecture, four hours studio each week. Formerly AR 205.* *3 semester hours*

ARTT 216 Watercolor II (R only)
A continued study of watercolor techniques as described in ARTT 215, presenting the opportunity for greater individual experimentation and expression. PREREQUISITE: *ARTT 215 or consent of department. Course may be repeated for audit without limit. Two hours lecture, four hours studio each week. Formerly AR 206.* *3 semester hours*

ARTT 220 Ceramics II
Second of two related courses (with ARTT 120, which must be taken first). The aesthetic and technical aspects of the ceramic process. Studio sessions will involve a continued study of the nature of clay with the development of forms derived from the potter's wheel. Increased emphasis placed on surface decoration, glaze formulation, and kiln firing skills. Design and craftsmanship are emphasized. PREREQUISITE: *ARTT 120 or consent of department. Two hours lecture, four hours studio each week. Formerly AR 122.* *3 semester hours*

ARTT 221 Sculpture I
The problems and principles of sculpture. Theory and basic techniques involved in additive and subtractive methods in both relief sculpture and sculpture in the round. Materials may include clay, wood, stone, modern plastics, plaster, and metal. PREREQUISITES: *ARTT 102 and ARTT 103, or consent of department. Two hours lecture, four hours studio each week. Formerly AR 221.*
3 semester hours

ARTT 222 Sculpture II
A continuation of ARTT 221 for students who have successfully completed that course. Emphasis on individual experimentation and expression. In addition to direct methods, casting methods are used. PREREQUISITE: *ARTT 221 or consent of department. Two hours lecture, four hours studio each week. Formerly AR 222.* *3 semester hours*

Courses designated with an M after the name fulfill the General Education global and cultural perspectives requirement.
Common course outcomes for most courses can be found online at www.montgomerycollege.edu/courses.

ARTT 225 World Woodcut and Relief Traditions *(ARTD[M])*
Students will learn basic woodcut and relief printing techniques while studying multicultural influences in imagery, concepts, and the use of materials from Asia, Africa, Europe, and the Americas. Students cannot also receive credit for ARTT 228. *Two hours lecture, four hours studio each week. Formerly AR 213.* *3 semester hours*

ARTT 226 Monotype Workshop
An exploration of the monotype as an experimental printmaking medium. A range of materials, tools, and techniques will be introduced with an emphasis on individual experimentation and expression. Course may be repeated for audit without limit. *Two hours lecture, four hours studio each week. Formerly AR 226.* *3 semester hours*

ARTT 227 Printmaking: Lithography (R and TP/SS only)
Processes, materials, and techniques of fine art lithography are explored. Emphasis is placed on expressing visual concepts and ideas through drawing and appropriate technical manipulations on stones and/or plates, and printing in both black and white and color. Students cannot also receive credit for ARTT 228. *Course may be repeated for audit without limit. Two hours lecture, four hours studio each week. Formerly AR 214.* *3 semester hours*

ARTT 228 Lithography and Relief Printmaking
Materials and techniques of fine art lithography will be investigated, with an emphasis on the expression of one's ideas through appropriate technical manipulations. In addition, students may explore various relief printmaking procedures to produce woodcuts, linocuts, or collographs. Students cannot also receive credit for ARTT 225 or ARTT 227. *Course may be repeated for audit without limit. Two hours lecture, four hours studio each week. Formerly AR 223.* *3 semester hours*

ARTT 230 Intaglio Printmaking
An introduction to the fine art of metal plate etching. The techniques of drypoint hardground, softground, aquatint, and engraving are explored. *Course may be repeated for audit without limit. Two hours lecture, four hours studio each week. Formerly AR 224.* *3 semester hours*

ARTT 233 Serigraphy
Introduction to materials and techniques of silkscreen printmaking. Various types of stencils and resists are investigated. Emphasis on use of serigraphy as a multicolor process and fine art form. *Two hours lecture, four hours studio each week Formerly AR 225.* *3 semester hours*

ARTT 241 Enameling I (R only)
An introduction to traditional techniques with emphasis on expression and craftsmanship. Exploration of basic methods of preparation, application, firing, and finishing vitreous enamel on copper. *Course may be repeated for audit without limit. Two hours lecture, four hours studio each week. Formerly AR 124.* *3 semester hours*

ARTT 242 Enameling II (R only)
A continuation of ARTT 241 with special attention given to techniques that involve integration of enameling and metalwork. Course may be repeated for audit without limit. PREREQUISITE: *ARTT 241 or consent of department. Two hours lecture, four hours studio each week. Formerly AR 125.* *3 semester hours*

ARTT 245 Jewelry and Metalsmithing (R only)
Introduction to the fundamental techniques and processes of jewelry fabrication and metalsmithing. Two- and three-dimensional forms in various metals explored. Design, craftsmanship, and expressive use of materials emphasized. *Course may be repeated for audit without limit. Two hours lecture, four hours studio each week. Formerly AR 229.* *3 semester hours*

ARTT 247 Weaving and Textiles *(ARTD)* (TP/SS only)
Introduction to the fundamental techniques and processes of weaving. Two- and three-dimensional forms in textiles explored. Design and craftsmanship emphasized in both traditional and experimental approaches to fiber. *Course may be repeated for audit without limit. Two hours lecture, four hours studio each week. Formerly AR 227.* *3 semester hours*

ARTT 252 Photographic Expression II
(G and TP/SS only)
Problems designed to achieve mastery of basic still photographic techniques with an emphasis on individual creative expression. This course will allow for experimental projects in black-and-white photography. PREREQUISITE: *ARTT 152 or consent of department. One hour lecture, four hours laboratory each week. Formerly AR 204.*
3 semester hours

ARTT 255-256 Studio Practicum
Directed studies providing opportunities for additional experience in the following studio areas: drawing, printmaking, ceramics, sculpture, weaving, jewelry, and painting. Students further develop proficiencies with previously introduced materials and techniques of a subject while expanding their understanding of the field through the pursuance of additional studio experience. Individual and class criticisms of work with integrated references to art history and to traditional and contemporary concepts of aesthetics. The following letters are added after the course number to indicate the various applied studio areas:

A – Drawing	D – Ceramics
B – Painting	E – Sculpture
C – Printmaking	G – Jewelry (R only)

PREREQUISITES: *Consent of department and successful completion of ARTT 100 and ARTT 205 for drawing; ARTT 211 and ARTT 212 for painting; ARTT 228 or ARTT 230 for printmaking; ARTT 120 and 220 for ceramics; ARTT 221 and ARTT 222 for sculpture; ARTT 245 for jewelry. Students are limited to three hours of credit in each studio area of ARTT 255 and three hours of credit in each studio area of ARTT 256. Course may be repeated for audit without limit. Two hours lecture, four hours studio each week. Formerly AR 280–281.* *3-3 semester hours*

ARTT 257 Individualized Art Workshop
A directed open laboratory provides experience opportunities in a fine arts area. Students develop proficiencies with previously introduced materials and techniques and expand their understanding through additional study. Lectures and lab work integrate with art history and traditional and contemporary concepts of aesthetics. The following letters are added after the course number to indicate specific fine arts areas:

A – Drawing	G – Jewelry
B – Painting	J – Crafts
C – Printmaking	K – Design
D – Ceramics	L – Art History,
E – Sculpture	M – Photography

PREREQUISITE: *Basic coursework in the area of study and consent of department. Course may be repeated for audit without limit. Two hours lecture, four hours laboratory each week. Formerly AR 285.* *3 semester hours*

ARTT 263 Professional Practice for the Visual Artist
In this capstone course of the A.F.A. curriculum, students develop an artist statement, résumé, portfolio, and slides in preparation for a formal presentation that conveys their experiences and skills as an emerging artist. PREREQUISITE: *Completion of first year of the A.F.A. curriculum. Two hours studio/laboratory each week. Formerly AR 275.*
1 semester hour

ARTT 265 Architectural History: Ancient to 1400 *(ARTD)*
A historical survey and critical study of the development of architecture and related arts from prehistoric times to the 15th century. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly AR 209.* *3 semester hours*

ARTT 266 Architectural History: 1400 to Present *(ARTD)*
A historical survey and critical study of the development of architecture and related arts from the 15th century to the present. Students in architectural programs are advised to take the history of architecture courses in sequence. Students may enroll in ARTT 266 without having taken ARTT 265. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly AR 210.*
3 semester hours

ARTT 270 Survey of African Art *(ARTD[M])*
A survey and analysis of the art and culture of major African regions. Emphasis on architecture, sculpture, painting, crafts, and performance with reference to cross-cultural and outside influences, religion, philosophy, and everyday life as they relate to the art of various African peoples. Field trips to museums and galleries. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly AR 208.* *3 semester hours*

ARTT 272 Survey of Asian Art *(ARTD[M])*
A survey and analysis of the art and culture of China, Japan, India, and southeast Asia. Emphasis on architecture, ceramics, painting, printmaking, and sculpture with reference to cross-cultural influences, religion, and philosophy as they relate to the art of those countries. Field trips to museums and galleries. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly AR 130.* *3 semester hours*

ARTT 275 Italian Renaissance Art *(ARTD)*
A survey and analysis of painting, sculpture, and architecture in Italy from the 14th through the 16th centuries. This course encompasses the origin of the Renaissance and the specific contributions of the great Italian cities of Florence, Padua, Pisa, Rome, Siena, and Venice, and emphasizes the achievements of its finest artists, including Alberti, Brunelleschi, Donatello, Giotto, Masaccio, Michelangelo, Raphael, Titian, and Leonardo da Vinci. Field trips to museums. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly AR 235.* *3 semester hours*

ARTT 278 American Art *(ARTD)*
A historical and philosophical interpretation of American painting, sculpture, architecture, and the minor arts from colonial times to the present. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly AR 219.* *3 semester hours*

ARTT 280 Modern Art: Its Origins and Development *(ARTD)*
A survey of major innovative art movements from the mid-19th century to the present in Europe and the United States with emphasis on the most important trends in painting and sculpture. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly AR 231.*
3 semester hours

ARTT 279 American Art Since 1945 *(ARTD)*
A study of 20th century American art, with focus on the phenomenon of New York's rise as a world art center after 1945. Emphasis is on painters and sculptors most significant in the development of the first truly American art styles, covering major movements such as abstract expressionism, pop art, minimalism, and photo realism on to the multiplicity of styles, forms, and media current since the 1980s. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly AR 220.*
3 semester hours

ARTT 290 Art Internship
Students work for College credit in a museum or other professional arts organization or venue. Students may propose an internship for one of the limited number available in the arts each year. Typically, the internships are awarded during the last year of study at Montgomery College. PREREQUISITES: *Open to art majors who have completed 15 arts-related credits. A 3.2 GPA and consent of departmental arts internship coordinator and the Arts Institute internship coordinator are required. May be repeated for a maximum of six credits with consent of department. Fifteen hours each week per semester. Formerly AR 295.* *3 semester hours*

ASLP—American Sign Language (ASL)

ASLP 100 ASL I *(HUMD[M])* (R only)
A survey of conversational ASL handshapes and basic grammatical structures. Basic cultural information that influences forms and communication in ASL will be presented and studied. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly SL 100.* *3 semester hours*

ASLP 105 Visual Gestural Communication (R only)
An introduction to the comprehension and expression of visual-gestural aspects of communication in relation to ASL. This course includes instruction in forms and hand shapes involved in mime and gesticulation. Emphasis is placed on activities that create visual, motor, and cognitive readiness for signed languages. Instructional activities will foster the development of visual, spatial, and motor language memory. Recommended to be taken with ASLP 106. *Assessment levels: ENGL 101/101A, READ 120. In-class is supplemented by one hour each week in the language learning laboratory. Three hours each week. Formerly SL 105.* *3 semester hours*

ASLP 106 Fingerspelling and Number Use in ASL (R only)
A foundation for comprehension, expression, and understanding of ASL handshapes as they are used in fingerspelling and numbers. The course includes an introduction to historical and physiological aspects of fingerspelling and number use in ASL. The course focuses on development skills for receptive and expressive spelling and reading of fingerspelling words and numbers, on proper biomechanical functions, on recognizing hand movements. Recommended to be taken concurrently with ASLP 105. *Assessment levels: ENGL 101/101A, READ 120. In-class is supplemented by one hour each week in the language learning laboratory. Three hours each week. Formerly SL 106.* *3 semester hours*

ASLP 110 ASL II *(HUMD[M])* (R only)
Broadens the use of conversational ASL handshapes and basic grammatical structures. Co-selection of features and mutual monitoring possibilities for topics will be examined to formulate ASL conversational context for occupation, activities, location, and stages of life. PREREQUISITE: *A grade of C or better in ASLP 100 or equivalent, or consent of department. Three hours each week. Formerly SL 110.*
3 semester hours

ASLP 121 Introduction to the Deaf Community and Culture *(BSSD[M])* (R only)
Provides a broad introduction to concepts related to the Deaf, Deaf culture, and the languages of people within Deaf communities in particular and Deaf society in general. The course examines current issues and languages in the Deaf community, including technology and diversity. *Assessment levels: ENGL 101/101A, READ 120. Formerly SL 121.*
3 semester hours

ASLP 200 ASL III (R only)
Development of advanced receptive and expressive skills in ASL, including politeness principles in ASL: fluency, tact, generosity, modesty, and solidarity. This course includes intensive work on conversational maxims in ASL: quantity, quality, relation, manner, and appropriateness. PREREQUISITE: *A grade of C or better in ASLP 110 or equivalent, or consent of department. Recommended to be taken concurrently with ASLP 205. Three hours each week. Formerly SL 200.* *3 semester hours*

ASLP 205 Structural ASL I (R only)
A consideration of the phonological, morphological, semantic, and pragmatic components of ASL. This course provides a foundation for the comprehension, expression, and understanding of ASL classifiers and their linguistic symbols and signing space for the ASL native. Topics include an examination of the grounded mental spaces utilized in narrative, constructed dialogue, constructed activity, and the non-manual signals used in narrative form. PREREQUISITES: *A grade of C or better in ASLP 105, ASLP 106, and ASLP 110; or consent of department. Recommended to be taken concurrently with ASLP 200. Three hours each week. Formerly SL 205.* *3 semester hours*

ASLP 206 Structural ASL II (R only)
A further consideration of the phonological, morphological, semantic, syntactic, and pragmatic components of ASL. This course includes a consideration of the sociolinguistic principles in American Sign Language and the cultural practices from which they derive, specifically focusing on language taboos, discourse, and linguistic variation. Recommended to be taken concurrently with ASLP 210. PREREQUISITE: *A grade of C or better in ASLP 205 or consent of department. Three hours each week. Formerly SL 206.* *3 semester hours*

ASLP 207 ASL Translation and Interpretation (R only)
Builds an integrated model of ASL translation and interpretation and includes skill development in the area of line-by-line translation, textual glossing, the interpretation of narratives, consecutive and simultaneous interpretation, semantic and syntactic circumlocution, and general interpretation. The course includes a consideration of ethics and issues in the practice of translation and interpretation. PREREQUISITES: *A grade of C or better in ASLP 200 and ASLP 205, or consent of department. Three hours each week. Formerly SL 207.*
3 semester hours

ASLP 210 ASL IV (R only)
Cultivating the communicative approach by learning ASL functions in interactive contexts. Methods of confirming and correcting information, asking for clarification, agreeing, declining or hedging and appropriate ways of getting and directing attention in various situations will be examined to frame effective communication in ASL. Recommended to be taken concurrently with ASLP 206. PREREQUISITE: *A grade of C or better in ASLP 200 or equivalent, or consent of department. Three hours each week. Formerly SL 210.*
3 semester hours

ASLP 222 Deaf History and Culture (R only)
Provides students the opportunity to immerse themselves in Deaf culture, history, and language. This course will present an in-depth consideration of Deaf history and the social, cultural, political, educational, and social aspects of the community as a cohesive American co-culture. Students will examine the norms and values of Deaf culture, as well as the linguistic, educational, social, and professional influences in Deaf culture and history. Recommended to be taken concurrently with ASLP 210. PREREQUISITES: *ASLP 121 and ASLP 200, or consent of department. Three hours each week. Formerly SL 222.* *3 semester hours*

ASLP 226 Semantics/Communications in ASL I (R only)
Examines the interpretation between non-manual facial expressions in ASL sentences and signs. Particular attention will be devoted to the study of (1) the relations of facial expressions to the signs, (2) the relations of facial expressions to users, and (3) the relations of non-manual expressions to the conditions. The primary focus will be on the ability of the student to communicate in size and space parameters, using sarcasm, exclamation, insults, and other emotive functions. The role of these functions in communicating the beliefs, knowledge, and interpretations of the participants will be considered. This is accomplished to preserve the semantics and style in communicative mode. PRE- or COREQUISITE: *A grade of C or better in ASLP 200 or equivalent, or consent of department. In-class is supplemented by one hour each week in the language learning laboratory. Three hours each week. Formerly SL 226.* *3 semester hours*

ASLP 269 Independent Study in ASL
This course invites advanced students to pursue a further in-depth independent study of a specialized aspect of ASL, to explore specific grammatical and cultural aspects of ASL, to consider the historical and practical implications of these aspects, or to explore their own specialization within the curriculum more closely. PREREQUISITES: *ASLP 207 or concurrent enrollment in ASLP 201 and a score of 2.5 or better in the ASL Proficiency Interview, or consent of department. Minimum of 30 hours per semester hour. Formerly SL 269.* *1–4 semester hours*

ASLP 285 Practicum in ASL
This course invites students to explore some specific practical applications of ASL, to consider the implications of these applications, and to examine their own assumptions of these ASL aspects more closely. The studies in this independent course will help students who want to make the most of their skills, using ASL in practical situations (interpreting, peer tutoring, helping other students, or working in Deaf environment). PRE- or COREQUISITES: *ASLP 269 and an earned score of 3.0 or better in the ASL Proficiency Interview, or consent of department. Fifteen hours of work each week to earn three semester hours; 20 hours of work each week to earn four semester hours. Formerly SL 285.*
3–4 *semester hours*

ASTR—Astronomy

ASTR 101 Introductory Astronomy *(NSLD)*

A basic introduction to astronomy that emphasizes appreciation of the earth's relationship to the universe. The basic laws of physics as they apply to astronomy are covered, along with telescopes and data collection and analysis techniques utilized by astronomers. Also covered are the evolution of stars, the solar system, galaxies, and the origin and evolution of the universe. Laboratory sessions, both computer-based and other, give practical application to material covered in lectures. Two nighttime observing sessions are also included. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment level: ENGL 101/101A. Three hours lecture, two hours laboratory, one hour discussion each week. Formerly AS 101.* *4 semester hours*

ASTR 202 Introduction to Modern Astronomy *(NSLD)*

A basic course elaborating on topics briefly covered in ASTR 101 including black holes, pulsars, planetary structure, galactic structure, radio and x-ray astronomy. A major portion of the course is devoted to observing and observational techniques. Laboratory sessions cover such topics as the use of computer-controlled telescopes for visual and electronic observation, planning observations, CCD imaging and image processing techniques. Numerous nighttime observing sessions will be conducted. PREREQUISITE: *ASTR 101 or consent of course instructor. Three hours lecture, three hours laboratory each week. Formerly AS 102.*

4 semester hours

AUTO—Automotive Technology

AUTO 099 Basic Automotive Maintenance (R only)

Designed to provide the car owner with basic information on maintenance service that can be performed at home. Introduces basic theory of the automobile. Includes simple troubleshooting techniques, the theory of preventative maintenance. Selection and safe usage of automotive tools. This course is not recommended for automotive degree and certificate students. *One hour lecture, two hours laboratory each week. Formerly AT 099.*

2 semester hours

AUTO 101 Introduction to Automotive Technology (R only) **CE**

An introduction to the operating systems of the modern automobile. Explores current changes in the industry along with career opportunities. Covers identification and the safe use of hand, pneumatic, and electrical tools used in automotive service. Explains the basic operating procedures of shop equipment. Presents Occupational Safety and Health Act standards pertaining to the automotive field for greater individual and environmental safety. *Two hours lecture, two hours laboratory each week. Formerly AT 101.* *3 semester hours*

AUTO 111 Engine Repair (R only) **CE**

Preparation for ASE A-1 Engine Repair technician certification exam. Course details the purpose, parts, and operation of the gasoline internal combustion engine. Class concentrates on engine rebuilding including mechanical assessment, removal, disassembly and cleaning, inspection, reconditioning and repair, assembly, installation, and break-in. All upper- and lower-end services are discussed. Laboratory exercises guide the student through their engine rebuild project. It is strongly recommended the student supply a personally owned engine for the class, but not required. PREREQUISITE: *A grade of C or better in AUTO 101. Two hours lecture, four hours laboratory each week. Formerly AT 111.*

4 semester hours

AUTO 130 Manual Drive Train and Axles (R only) **CE**

Preparation for ASE A-3 Manual Drive Train and Axles technician certification exam. Discusses purpose, parts, operation, failure diagnosis, and overhaul of manual transmissions, transaxles, clutch assemblies, differentials and transfer cases, shafts, and joints. Laboratory exercises emphasize current service and diagnostic procedures. PREREQUISITE: *A grade of C or better in AUTO 101. Three hours lecture, four hours laboratory each week. Formerly AT 230.* *5 semester hours*

AUTO 140 Suspension and Steering (R only) **CE**
Preparation for ASE A-4 Suspension and Steering technician certification exam. Discusses purpose, parts, operation, and failure diagnosis of automotive suspension and steering systems. Topics include inspection, service, repair, and replacement of suspension system links, control arms, ball joints, bushings, shocks, struts, and springs. Steering columns, linkages, gearboxes, rack and pinion assemblies, pumps, lines, and hoses are covered. Two- and four-wheel alignment is included. Laboratory exercises emphasize current service and diagnostic procedures. PRE- or COREQUISITE: *AUTO 101. Three hours lecture, four hours laboratory each week. Formerly AT 140.*
5 semester hours

AUTO 150 Brakes (R only) **CE**
Preparation for ASE A-5 Brakes technician certification exam. Discusses purpose, parts, operation, and failure diagnosis of automotive disc and drum brake systems. Topics include inspection, repair, and replacement of master cylinders, power boosters, hydraulic lines and hoses, control valves, friction linings, calipers and wheel cylinders, cables, brackets, and hardware. ABS operation and diagnosis is included. Laboratory exercises emphasize current service and diagnostic procedures. PRE- or COREQUISITE: *AUTO 101. Three hours lecture, four hours laboratory each week. Formerly AT 150.*
5 semester hours

AUTO 161 Automotive Electricity I (R only) **CE**
Discusses basic electrical concepts applicable to automotive components, circuits, and systems. Common failures, diagnostic techniques, and repair procedures are covered. Selection, use, and maintenance of specialized service tools are emphasized. Use of printed and electronic wiring diagrams and service information to diagnose and repair faults is included. Laboratory exercises emphasize on-vehicle application of theory, tools, and technique. *Assessment level: AELR 930/READ 099. Two hours lecture, three hours laboratory, one hour discussion each week. Formerly AT 161.*
4 semester hours

AUTO 180 Basic Engine Performance (R only) **CE**
Concentrates on engine mechanical evaluation and electronic engine control. First half of the class discusses fluid leaks, engine noises, engine vibration, and exhaust smoke. Lubrication, induction, and cooling system assessment is also included. Second half of the class discusses PCMs, scanners, DTCs, and open- versus closed-loop mode. Sensor types, operation, diagnosis, and replacement are covered. Laboratory exercises emphasize current service and diagnostic procedures. PRE- or COREQUISITES: *AUTO 101 and AUTO 161. Two hours lecture, three hours laboratory, one hour discussion each week. Formerly AT 180.* *4 semester hours*

AUTO 200 Auto Tech Practicum (R only)
A cooperative effort with the automotive industry. Program is jointly developed to assure the student's participation is consistent with chosen academic plan and the employer's facilities and interests. The practicum enables the student to apply learned material in an automotive industrial environment. Periodic meetings monitor work progress and skills development. Minimum of 75 hours of work experience. PREREQUISITES: *10 credits or more in AUTO classes and consent of department. Formerly AT 200.*
1 semester hour

AUTO 220 Automatic Transmission/ Transaxles (R only) **CE**
Preparation for ASE A-2 Automatic Transmission/ Transaxle technician certification exam. Discusses purpose, parts, operation, failure diagnosis, and overhaul of automatic transmissions and transaxles. Laboratory exercises emphasize current service and diagnostic procedures. PREREQUISITES: *A grade of C or better in AUTO 101, AUTO 161, and AUTO 180. Two hours lecture, six hours laboratory each week. Formerly AT 220.* *5 semester hours*

AUTO 262 Battery/Starting/Charging (R only) **CE**
Discusses purpose, parts, operation, and failure diagnosis of automotive batteries, cranking systems, and charging systems. Cruise control, remote keyless entry, theft deterrent, and remote start systems are also covered. Laboratory exercises emphasize on-vehicle use of common and specialized electrical service tools. May be taken with AUTO 263. PREREQUISITE: *A grade of C or better in AUTO 161. Two hours lecture, two hours laboratory each week. Formerly AT 162.* *3 semester hours*

AUTO 263 Chassis Circuits (R only) **CE**
Discusses purpose, parts, operation, and failure diagnosis of interior/exterior lighting systems; gauge, warning, and driver information systems; horn, wiper/washer, and heated glass circuits; motor-driven accessory circuits and supplementary restraint systems. Laboratory exercises emphasize the use of common electrical service tools on-vehicle to diagnose failures. May be taken with AUTO 262. PREREQUISITE: *A grade of C or better in AUTO 161. Two hours lecture, three hours laboratory, one hour discussion each week. Formerly AT 163.*
4 semester hours

AUTO 270 Automotive HVAC (R only) **CE**
Preparation for ASE A-7 Heating and Air Conditioning technician certification exam and EPA 609 Refrigerant Handlers license. Discusses purpose, parts, operation, and failure diagnosis of heating, ventilation, and air conditioning systems. Manual, semiautomatic, and automatic systems are covered. Safe and proper use of refrigerant recovery/recycling/recharging machines is emphasized during the service of systems. Laboratory exercises concentrate on current service and diagnostic procedures. PREREQUISITE: *A grade of C or better in AUTO 161. Two hours lecture, three hours laboratory, one hour discussion each week. Formerly AT 270.*
4 semester hours

AUTO 282 Engine Performance II (R only) **CE**
An advanced course covering fuel delivery and ignition systems. Course discusses inspection, testing, service, and repair of induction, fuel supply, and exhaust systems. Fuel pumps, pressure regulators, gauges, sending units, tanks, lines, and hoses are included. Fuel injector design, operation, testing, and replacement is covered. Distributor and electronic ignition systems are discussed. Laboratory exercises emphasize current service and diagnostic procedures. May be taken with AUTO 283. PREREQUISITE: *A grade of C or better in AUTO 180. Two hours lecture, three hours laboratory, one hour discussion each week. Formerly AT 282.*
4 semester hours

AUTO 283 Engine Performance III (R only) **CE**
An advanced course focusing on emission controls and driveability. Class discusses current OBD formats in detail including interpretation of DTCs, freeze-frame data, serial data, and readiness monitors. Exhaust gas analysis is covered. Laboratory exercises emphasize current service and diagnostic procedures. May be taken with AUTO 282. PREREQUISITE: *A grade of C or better in AUTO 180. Two hours lecture, three hours laboratory, one hour discussion each week. Formerly AT 283. 4 semester hours*

BIOL—Biological Sciences

BIOL 101 General Biology *(NSLD)*
Designed to satisfy the General Education science requirement, this course introduces the basic principles governing living organisms with emphasis on the molecular and cellular basis of life. Concepts in genetics, reproduction, development, evolution, and ecology are discussed. Not recommended to those students with credit in BIOL 150 or BIOL 151. PREREQUISITES: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Eligibility for ENGL 101 or ENGL 101A; completion of AELR 930 or appropriate assessment test score. Two hours lecture, four hours laboratory each week. Formerly BI 101.*
4 semester hours

BIOL 105 Environmental Biology *(NSND)*
This course is designed for non-science majors and emphasizes environmental problems facing society. Topics include ecological principles, human population dynamics, energy sources, land and soil use, air pollution, water pollution, and endangered species. This course satisfies the General Education three-credit natural sciences distribution requirement. To satisfy the natural sciences lab distribution requirement, BIOL 105 and BIOL 106 must be taken concurrently. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly BI 105A.*
3 semester hours

BIOL 106 Environmental Biology Laboratory *(NSLD)*
A combination of laboratory investigations and field trips is used to introduce students to the scientific method and experimental design, demonstrate basic ecological principles, and familiarize students with local resources. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department.* COREQUISITE: *BIOL 105. To satisfy the natural sciences lab distribution requirement, BIOL 105 and BIOL 106 must be taken concurrently. Course may be repeated without the corequisite with consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours laboratory each week. Formerly BI 105B.* *1 semester hour*

BIOL 108 Marine Environmental Science *(NSND)*
This course focuses on the marine environment, scientific and public concerns, the ocean and its effect on the Earth's weather, oceanic characteristics and diversity of life forms, the effect on human and cultural development, pollutants, and the potential exploitation of marine resources. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly BI 106.* *3 semester hours*

BIOL 111 Natural Science of the Chesapeake Bay *(NSND)*
The Chesapeake Bay is an estuary of natural and economic importance surrounded by one of the most densely populated regions of the United States. Basic principles of natural science will be learned using the Chesapeake watershed as a model. A historical perspective of the bay will be presented and contrasted with the current condition of the estuary. Students will research, discuss, and present issues influencing the Chesapeake Bay. One field trip required. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly BI 109.* *3 semester hours*

BIOL 114 Understanding Viruses *(NSND)*
Designed for non-science majors, this is an introduction to the foundation of modern virology from smallpox to AIDS. The approach will be both historical and experimental, emphasizing the discovery of viruses as a biological form, the role of viruses in disease, and the impact of viruses in the development of modern cell and molecular biology. Various aspects of AIDS as a viral disease will be explored. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly BI 104.* *3 semester hours*

BIOL 130 The Human Body *(NSND)*
This course is designed for non-biology majors. Introduces the student to the structure and function of human body systems. Topics include basic chemistry, cell structure and function, tissues, organ systems (e.g. digestive, circulatory, reproductive systems), and associated common disease and illnesses. To satisfy the natural sciences lab distribution requirement BIOL 130 and BIOL 131 must be taken concurrently. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly BI 130A.* *3 semester hours*

BIOL 131 The Human Body Laboratory *(NSLD)*
This course is designed for non-biology majors. Laboratory work that illustrates and reinforces the concepts discussed in BIOL 130. To satisfy the natural sciences laboratory distribution requirement, BIOL 130 and BIOL 131 must be taken concurrently. Course may be repeated without the corequisite with consent of department. COREQUISITE: *BIOL 130. Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours laboratory each week. Formerly BI 130B.* *1 semester hour*

BIOL 136 Introduction to the Biology of Human Reproduction
This course introduces anatomical, hormonal, and neurological aspects of human reproductive biology. Topics include basic male/female anatomy, reproductive endocrinology, sexual differentiation, fertilization and early fetal development, pregnancy, labor and birth, and factors influencing fertility. *Assessment levels: ENGL 101/ 101A, MATH 093/096, READ 120. Three hours each week. Formerly BI 206.* *3 semester hours*

BIOL 150 Principles of Biology I *(NSLD)*
This course, first in a two-semester sequence intended for natural science majors, covers the molecular and cellular basis of life, enzymes, photosynthesis, cell respiration, genetics, reproduction, and development. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours lecture, three hours laboratory each week. Formerly BI 107. 4 semester hours*

BIOL 151 Principles of Biology II *(NSLD)*
This course, the second in a two-semester sequence intended for natural science majors, examines the basis of life at the level of the organism, evolution, taxonomy, kingdoms of life, ecology, and behavior. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours lecture, three hours laboratory each week. Formerly BI 108.*
4 semester hours

BIOL 210 Microbiology
Provides an overview of microorganisms, emphasizing bacteria and including the structure, metabolic activities, genetics, and mechanisms of control of microorganisms, as well as the relationships of microorganisms to humans, the environment, disease, and immunity. Laboratory sessions include basic techniques of culturing and identifying microorganisms, as well as observations of their activities. PREREQUISITE: *A grade of C or better in BIOL 150. Two hours lecture, four hours laboratory each week. Formerly BI 203.* *4 semester hours*

BIOL 212 Human Anatomy and Physiology I *(NSLD)*
Detailed study of the structure and function of the body, including tissues, skin, skeletal system, muscular system, nervous system, and sense organs. PREREQUISITE: *A grade of C or better in BIOL 150. Two hours lecture, four hours laboratory each week. Formerly BI 204.* *4 semester hours*

BIOL 213 Human Anatomy and Physiology II *(NSLD)*
This course studies in detail the structure and function of the body, including digestion and metabolism, the respiratory system, the circulatory system and immunity, the excretory system and body fluids, the reproductive system, human development, and the endocrine system. PREREQUISITE: *A grade of C or better in BIOL 212. Two hours lecture, four hours laboratory each week. Formerly BI 205.*
4 semester hours

BIOL 217 Ecology *(NSLD)*
Study of the relationships of organisms to their environment, with emphasis on classic studies and on recent advances in the field. Topics include evolutionary ecology, population growth and regulation, interspecific relationships (e.g., competition, predation), behavioral ecology, community ecology, systems ecology (e.g., energy flow, biogeochemical cycles), and ecological effects of human activities. PREREQUISITE: *Four hours of biological sciences or consent of department. Assessment level: MATH 110 or higher. Three hours lecture, three hours laboratory each week. Formerly BI 207.*
4 semester hours

BIOL 220 General Genetics
This course introduces major concepts in genetics at the cellular, molecular, and population levels; it also reviews and expands classical Mendelian principles, the molecular nature of the gene, gene action, gene regulation, and gene frequencies in populations. Examples, drawn from prokaryotes and eukaryotes, emphasize recent advances in health, medicine, and biotechnology. PREREQUISITES: *A grade of C or better in BIOL 150, MATH 110 or higher. Four hours of chemistry recommended but not required. Assessment levels: ENGL 101/ 101A, READ 120. Three hours lecture, three hours laboratory each week. Formerly BI 209.*
4 semester hours

BIOL 222 Principles of Genetics
An introduction to the underlying principles, theories, technology, and vocabulary that constitute the discipline of genetics. Concentrating on the molecular aspect of classical and extended genetics, course topics include molecular organization of genetic information in viruses, prokaryotes, and eukaryotes; the molecular basis of phenotypic variation; and the molecular aspects of gene action, expression, and regulation. Collectively, this course provides a framework for understanding how genetics is used as a tool for investigation of issues related to human health, medicine, and in biotechnology. PREREQUISITES: *A grade of C or better in BIOL 150, MATH 110 or higher, or consent of department. Students may not receive credit for both BIOL 222 and BIOL 220. Three hours lecture, two hours of discussion/ recitation each week. Formerly BI 222.*
4 semester hours

BIOL 226 Nutrition
A course in basic nutritional requirements and considerations of the abnormalities caused by excesses or deficiencies of these requirements. Dietary habits and needs of various age groups and conditions will be studied. PREREQUISITES: *One college-level biology course and one college-level chemistry course. Three hours each week. Formerly BI 213.*
3 semester hours

BIOL 228 Pathophysiology
Presents the underlying concepts and biological basis for common pathological disorders of all body systems. PREREQUISITE: *A grade of C or better in BIOL 212.* PRE- or COREQUISITE: *BIOL 213. Three hours each week. Formerly BI 218.*
3 semester hours

BIOL 230 Molecular Cell Biology
A detailed study of the molecular structure and function of the eukaryotic cell including cell ultrastructure, molecular genetic mechanisms and techniques, structure of chromosomes and genes and transcriptional as well as posttranscriptional control of gene expression, structure of biomembranes and movement of molecules into and through cellular membranes, cell signaling mechanisms, cytoskeletal systems and cellular movement, interactions, division, lineage and death of cells, molecular cell biology of development, of nerve cells, of immunology and of cancer. PREREQUISITE: *A grade of C or better in BIOL 150. Four hours of chemistry recommended but not required. Three hours lecture, three hours laboratory each week. Formerly BI 230.* *4 semester hours*

BIOT—Biotechnology

BIOT 110 Introduction to Biotechnology
Designed to introduce the student to the concepts of biotechnology as they relate to working in the biotechnology industry. Included are overviews of product development, GLP and cGMP, employer expectations, basic laboratory math and statistics, buffer preparation, handling of equipment and reagents (e.g., enzymes), introduction to experimental design, safety considerations, ethics at the workplace, and introduction to relevant biotech databases available on the web. *Two hours each week. Formerly BT 101.* *2 semester hours*

BIOT 120 Cell Culture and Cell Function (G only)
An introduction to fundamental methods used to grow animal cells in culture and associated principles of cell structure and function. Topics in this course include aseptic technique, preparation and use of various culture media, cell counting and dilution, maintenance and propagation of cell lines, origin and uses of various cell lines, contamination, cell staining techniques, and quality control. A survey of metabolism, cell structure and function, growth factors and signal transduction. PREREQUISITES: *BIOL 150; CHEM 131 or consent of department. Two hours lecture, three hours laboratory each week. Formerly BT 117.* *3 semester hours*

BIOT 200 Protein Biotechnology (G only)
This course provides an introduction to protein structure and function. Topics include primary, secondary, tertiary, and quarternary structure. Peptide and protein synthesis and translation systems for protein production are considered along with preservation of structure/function. Functional assays for proteins including basic principles of enzymology, enzyme kinetics, and binding assays are discussed. Strategies and methods of protein purification are considered with emphasis on chromatographic and electrophoretic techniques. Principles of proteomics including peptide mapping and sequencing. Diagnostic, therapeutic, and industrial applications of protein products are discussed. PREREQUISITES: *BIOL 150; CHEM 150 or consent of department. Three hours lecture, three hours laboratory each week. Formerly BT 200.*
4 semester hours

BIOT 230 Basic Immunology and Immunological Methods (G only) **CE**
A brief survey of the components of the immune system and how they interact. B and T cell development, activation and culture, the role of cytokines, their production and purification, signal transduction processes in B-cell activation, the role of MHC complexes, immunoglobulin synthesis and origins of diversity, antigen-antibody interactions, practical aspects of raising and purifying polyclonal and monoclonal antibodies, handling and labeling of antibodies, applications of antibodies including Western blotting, ELISA, and immunohistochemistry PREREQUISITES: *BIOT 120; BIOT 200 or consent of department. Three hours lecture, three hours laboratory each week. Formerly BT 204.* *4 semester hours*

BIOT 240 Nucleic Acid Methods (G only)
An introduction to current methods and theory of basic molecular techniques used in the study of nucleic acids. Lecture topics include structure of DNA and RNA, DNA isolation and sequencing, an introduction to genomics and bioinformatics, probe design and hybridization, DNA replication, PCR, microarrays, RNA isolation, regulation of prokaryotic and eukaryotic gene expression, enzymes used in molecular biology, principles of cloning including the use of vectors for sequencing and expression. PREREQUISITES: *BIOL 210 and CHEM 150; BIOT 200 or consent of department. Three hours lecture, three hours laboratory each week. Formerly BT 213.* *4 semester hours*

BIOT 250 Principles of Biomanufacturing (G only)
An introduction to the process of producing a biological product using a cell line. The course will be organized as a production campaign in a simulated cGMP environment. Students will complete a batch record as they produce a biological product. Emphasis will be on upstream and downstream processes. Hands-on laboratory work will involve the preparation and qualification of growth media and chromatography buffers, the use of bioreactors and FPLC protein purification systems. The role of QA/QC will be discussed. PREREQUISITES: *BIOT 120; BIOT 200 or consent of department. Three hours lecture, three hours laboratory each week. Formerly BT 235.* *4 semester hours*

BLDG—Building Trades Technology

BLDG 130 Introduction to the Building Trades (R only) **CE**
An introduction to the construction process and the professional building trades. Topics include building process, materials, building systems and components, professional trades' roles and responsibilities, career opportunities, and construction industry issues. *Three hours each week. Formerly BU 130.* *3 semester hours*

BLDG 133 Building Trades Blueprint Reading (R only) **CE**
An introduction to reading, interpreting, and applying construction drawings in the residential and light commercial building trades. Topics include drawing types, symbols and terminology, scale and dimensioning, floor plans, elevation, and mechanical and detail plans. *Three hours each week. Formerly BU 131.* *3 semester hours*

BLDG 136 Construction Safety (R only) **CE**
An introduction to safety issues and standards as they relate to the construction trades. Topics include OSHA/MOSH standards and requirements, personal protection, hazardous conditions, tools and equipment, electrical safety, first aid, and workers' rights and responsibilities. *Two hours each week. Formerly BU 132.* *2 semester hours*

BLDG 140 Fundamentals of Carpentry (R only) **CE**
An introduction to framing and the carpentry trade. Topics include material selection and estimating; basic calculations; tools; print reading; layout; and floor, wall, and ceiling framing. *Two hours lecture, four hours laboratory each week. Formerly BU 140.* *4 semester hours*

BLDG 150 Fundamentals of Electrical Wiring (R only) **CE**
An introduction to electrical wiring and the electrical trade. Topics include material identification and selection, tools, electrical theory, switch and receptacle wiring, electrical plans reading, and electrical safety. *Two hours lecture, four hours laboratory each week. Formerly BU 144.* *4 semester hours*

BLDG 160 Fundamentals of Plumbing (R only) **CE**
An introduction to plumbing and the plumbing trade. Topics include material identification and selection, tools, water supply and waste systems, pipes and fittings, fixtures, plumbing plans reading, and water heaters. *Two hours lecture, four hours laboratory each week. Formerly BU 146.*
4 semester hours

BLDG 170 Fundamentals of Refrigeration (R only) **CE**
An introduction to the theory, principles, and applications of heat transfer as applied to refrigeration processes and the compression refrigeration cycle. Topics include refrigerants, system performance, tools, tubing and fittings, soldering and brazing, and system charging and evacuation. *Three hours lecture, two hours laboratory each week. Formerly BU 170.* *4 semester hours*

BLDG 172 HVAC Electricity (R only) **CE**
An introduction to the theory and applications of electricity as applied to heating, ventilation, and air conditioning systems. Topics include Ohm's Law, schematics, control and line voltage circuits, meters, motors, and troubleshooting. *Three hours lecture, two hours laboratory each week Formerly BU 172.* *4 semester hours*

BLDG 174 HVAC Technician Development (R only) **CE**
An overview of the HVAC technician's professional development responsibilities and opportunities. Refrigerant transition and recovery certification training will be provided. Topics include career opportunities, customer relations, safety, and environmental issues. PREREQUISITE: *BLDG 170. Two hours each week. Formerly BU 174.* *2 semester hours*

BLDG 182 Renewable and Sustainable Energy Technologies (R only)
An introduction to the theory, principles, and applications of renewable and sustainable energy technologies. Topics include solar thermal and solar photovoltaic systems, hydropower, wind generators, geothermal, biofuels, fuel cells, and climate change and fossil fuels. *Three hours each week. Formerly BU 182.* *3 semester hours*

BLDG 184 Solar PV Design and Installation (R only)
An overview of the fundamentals necessary to design and install a solar photovoltaic electrical system. Topics include grid-tied and battery systems, sizing, mounting, equipment, permitting, code requirements, and financial and environmental incentives. Successful completion of this course allows students to take the NABCEP PV Entry Level Exam. *Three hours lecture, one hour laboratory each week. Formerly BU 184.* *3 semester hours*

BLDG 186 Wind Generator Systems (R only)
An introduction to wind energy electrical systems. Topics include wind assessment, small wind system siting and selection, towers, permitting, code requirements, and financial and environmental incentives. Utility scale wind energy will also be explored. *Two hours lecture, one-half hours laboratory each week. Formerly BU 185.* *2 semester hours*

BLDG 188 Solar Thermal Design and Installation (R only)
An overview of the fundamentals necessary to design and install a solar thermal hot water and heating system. Topics include residential solar thermal systems, sizing, mounting, equipment, permitting, code requirements, and financial and environmental incentives. *Three hours lecture, one hour laboratory each week. Formerly BU 186.* *3 semester hours*

BLDG 200 Special Topics in Building Trades Technology
This course focuses on selected topics in building trades technology, presented as a result of technological change or new research emphasis or community or student interest. Topics may extend or specify any of the regular building trades technology course offerings. New topics appear each semester in the class schedule. PREREQUISITE: *Depends on topic. Formerly BU 200.* *1–3 semester hours*

BLDG 230 Building Codes and Standards (R only)
An examination of building codes and standards applied to residential buildings. The International Residential Code (IRC) will be emphasized, and local area amendments will be addressed. Topics include planning and permitting, foundations, floors, walls, roofs, energy efficiency, chimneys, and fireplaces. PREREQUISITES: *BLDG 130 and BLDG 133, or consent of department. Three hours each week. Formerly BU 230.* *3 semester hours*

BLDG 240 Advanced Framing and Exterior Finishing (R only)
A continuation of BLDG 140, emphasizing framing and exterior finishing of residential buildings. Topics include rafter layout and roof framing, stair calculations and installation, steel framing, exterior door and window installation, and roofing and siding materials and installation. PREREQUISITE: *BLDG 140. Two hours lecture, four hours laboratory each week. Formerly BU 240.* *4 semester hours*

BLDG 242 Remodeling and Interior Finishing (R only)
A continuation of BLDG 140, emphasizing remodeling and interior finishing of residential buildings. Topics include insulation, drywall installation and finishing, painting and wall coverings, cabinetry and countertops, trim and casing installation, floor finishing, tile, and remodeling techniques. PREREQUISITE: *BLDG 140. Two hours lecture, four hours laboratory each week. Formerly BU 241.* *4 semester hours*

BLDG 250 Residential Electrical Wiring (R only)
A continuation of BLDG 144, emphasizing electrical wiring of residential buildings. Topics include electrical theory, residential design and layout, electrical service calculation and installation, National Electrical Code (NEC), device wiring and installation, lighting, and swimming pool wiring. PREREQUISITE: *BLDG 150. Two hours lecture, four hours laboratory each week. Formerly BU 244.* *4 semester hours*

BLDG 252 Commercial Electrical Wiring (R only)
A continuation of BLDG 144, emphasizing electrical wiring of commercial buildings. Topics include conduits and cables, branch circuits and feeders, fasteners, motors and transformers, services and panelboards, and commercial wiring codes and specifications. PREREQUISITE: *BLDG 150. Two hours lecture, four hours laboratory each week. Formerly BU 245.* *4 semester hours*

BLDG 256 National Electrical Code (R only) **CE**
An examination of the National Electrical Code (NEC) and its application in electrical construction. Topics include terminology, wiring specifications and methods, grounding and bonding, tables and calculations, overcurrent protection, services, branch circuits and feeders, raceways, cables, motors, and equipment. PREREQUISITE: *BLDG 150 or consent of department. Three hours each week. Formerly BU 264.* *3 semester hours*

BLDG 271 Heating Systems (R only)
A study of the operation, installation, servicing, and troubleshooting of gas, oil, and electric heating systems. Topics include installation and service procedures, tools, equipment, systems, fuels, and principles of combustion. PREREQUISITES: *BLDG 170 and BLDG 172, or consent of department. Three hours lecture, two hours laboratory each week. Formerly BU 271.* *4 semester hours*

BLDG 273 Air Conditioning and Heat Pump Systems (R only)
A study of the operation, installation, servicing, and troubleshooting of cooling-only and heat pump systems. Topics include installation and service procedures, tools, equipment, systems and subsystems, and cooling principles. PREREQUISITES: *BLDG 170, BLDG 172, and BLDG 174, or consent of department. Three hours lecture, two hours laboratory each week. Formerly BU 273.* *4 semester hours*

BLDG 275 Residential HVAC System Design (R only)
Intended for advanced HVAC students, this course covers the design and selection of equipment for residential heating and cooling systems. Topics include equipment sizing and selection, duct sizing, air distribution, code requirements, and energy efficiency. PREREQUISITES: *BLDG 271 and BLDG 273, or consent of department. Assessment level: MATH 080. Two hours each week. Formerly BU 275.* *2 semester hours*

BLDG 277 Industry Competencies: Residential Gas and Oil Heating (R only)
A study of the standards of basic competencies included in the Industry Competency Exam (ICE) for Residential Oil and Gas Heating. PREREQUISITE: *BLDG 271. One hour each week. Formerly BU 277.* *1 semester hour*

BLDG 278 Industry Competencies: Air Conditioning and Heat Pumps (R only)
A study of the standards of basic competencies included in the Industry Competency Exam (ICE) for Air Conditioning and Heat Pumps. PREREQUISITE: *BLDG 273. One hour each week. Formerly BU 278.* *1 semester hour*

BLDG 284 Advanced Solar PV Design (R only)
Intended for advanced electrical students seeking to further their understanding of solar PV electrical systems. Topics include design calculations, NEC Article 690, micro- and central inverters, batteries and energy storage, wire sizing, electrical tables calculations, commercial PV systems, and more. PREREQUISITES: *BLDG 184 and BLDG 250, or consent of department. Two hours each week. Formerly BU 284.* *2 semester hours*

BSAD—Business Administration

BSAD 101 Introduction to Business CE-G and R
An introductory course designed to survey the field of business and its environment in order to give the student a broad overview of the principles, practices, institutions, and functions of business. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly BA 101.* *3 semester hours*

BSAD 111 Personal Finance
An introduction to some proven techniques of financial management for the individual. Emphasis on the development of a program of financial management, including budgeting, consumer credit, consumer spending, insurance, investments in real estate, securities, commodities, income tax planning, retirement planning, and other financial problems of the individual. *Assessment level: AELR 930/READ 099. Three hours lecture/discussion each week. Formerly BA 211.*
3 semester hours

BSAD 210 Statistics for Business and Economics CE-R
An introductory course in the business and economic application of descriptive and inferential statistics. The meaning and role of statistics in business and economics, frequency distributions, graphical presentations, measures of central tendency and dispersion, probability, discrete and continuous probability distributions, inferences pertaining to means and proportions, regression and correlation, time series analysis, and decision theory will be discussed. PREREQUISITE: *A grade of C or better in MATH 093 or MATH 096; appropriate score on mathematics assessment test; or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly BA 210.*
3 semester hours

CCJS—Criminal Justice

CCJS 110 Administration of Justice *(BSSD[M])* (R only)
An analysis of crime and the administration of justice in a diverse, democratic society operating within a global environment. Emphasis is on the theoretical and historical development of law enforcement, courts, and corrections and the agents and agencies responsible for administering justice. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly CJ 110.*
3 semester hours

CCJS 201 Introduction to Law Enforcement (R only)
A survey of the philosophical and historical background, constitutional limitations, objectives, and processes in the enforcement of the law, and introduction to the nature and functions of public and private agencies responsible for enforcement. PREREQUISITE: *CCJS 110 or consent of department. Three hours lecture/discussion each week. Formerly CJ 111.* *3 semester hours*

CCJS 211 Criminal Investigation (R only)
Fundamentals of investigation: crime scene search and recording, collection and preservation of physical evidence, modus operandi, sources of information, interviews and interrogations, follow-up, and case preparation. PREREQUISITE: *CCJS 110 or consent of department. Three hours each week. Formerly CJ 211.*
3 semester hours

CCJS 215 Organization and Administration (R only)
A study of the management and administration of the criminal justice system to include the role of management in organizing, controlling, coordinating, directing, staffing, and managing change and innovations in criminal justice agencies. PREREQUISITE: *CCJS 110 or consent of department. Three hours lecture/discussion each week. Formerly CJ 215. 3 semester hours*

CCJS 216 Police Operations (R only)
Operational services; patrol, including analysis and distribution of the force; criminal investigation; intelligence and vice units; juvenile units; traffic administration. In-service law enforcement personnel may substitute this course for CCJS 201. PREREQUISITES: *CCJS 110 and CCJS 201 for preservice students, or consent of department. Three hours each week. Formerly CJ 216. 3 semester hours*

CCJS 221 Criminal Law (R and TP/SS only)
A study of the development, application, and enforcement of local, state, and federal laws; a review of criminal offenses as defined by such laws. Includes a review of court decisions pertinent to the administration of justice, such as arrests, searches, and seizures. PREREQUISITE: *CCJS 110, LGST 101, or consent of department. Three hours each week. Formerly CJ 221. 3 semester hours*

CCJS 222 Criminal Evidence (R only)
A description of the nature, types, collection, preservation, and introduction of evidence. An analysis of laws and court decisions relating to the admissibility of evidence. PREREQUISITE: *CCJS 110 or consent of department. Three hours each week. Formerly CJ 222. 3 semester hours*

CCJS 230 Introduction to Corrections (R only)
An organized study of prisons and correctional processes; operational techniques for controlling and changing criminal behavior; model correctional programs and alternatives to confinement. History of punishment, confinement, and treatment for adult and juvenile offenders. PREREQUISITE: *CCJS 110 or consent of department. Three hours each week. Formerly CJ 230. 3 semester hours*

CCJS 232 Criminal Forensics (R only)
A study of the application of science to law enforcement, to include an examination of a crime scene, laboratory analysis of blood and serums, comparative micrography, firearms identifications and ballistics, fingerprint, and other techniques. PREREQUISITE: *CCJS 110 or consent of department. Three hours each week. Formerly CJ 232. 3 semester hours*

CCJS 242 Theory and Practice (R only)
This course consists of a practicum to include a supervised 100-hour internship in an approved criminal justice agency (police, courts, corrections). Coursework will consist of 20 class hours designed to review philosophical and pragmatic differences between theory and practice. Students planning to complete this course should apply to the criminal justice agency of their choice at least three months prior to the course's start date. Many criminal justice agencies incorporate an application/background investigation into the internship experience that can take a few months to complete. Advanced departmental advising is available to help students identify potential internship locations. PREREQUISITE: *CCJS 111, CCJS 230, or consent of department. One hundred twenty (120) hours each semester. Formerly CJ 242. 3 semester hours*

CCJS 244 Contemporary Issues (R only)
This course focuses on contemporary issues, trends, and practices in the criminal justice field. PREREQUISITE: *CCJS 110 or consent of department. Three hours lecture/discussion each week. Formerly CJ 244. 3 semester hours*

CCJS 246 Constitutional Law (R only)
A topical study of the development of the U.S. Constitution through interpretation by the Supreme Court. Subjects include judicial review, federalism, congressional and presidential authority, the First Amendment, criminal rights, due process, and equal protection of the law. PREREQUISITE: *CCJS 110. Formerly CJ 246. 3 semester hours*

CCJS 250 Seminar: Criminal Justice (R only)
Topics of special interest such as social justice and deviant behavior, comparative criminal justice and criminology, victimology, and violence in America will be offered. PREREQUISITE: *CCJS 110, SOCY 100, or consent of department. Three hours lecture/discussion each week. Formerly CJ 250. 3 semester hours*

Courses designated with an M after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at www.montgomerycollege.edu/courses.

CCJS 255 Independent Study in Criminal Justice (R only)
A course designed to enable advanced students to pursue a topic of their own choosing with the guidance and supervision of an assigned faculty member. Topics should not duplicate any course topics already offered in the program. PREREQUISITES: *CCJS 110, ENGL 102 or ENGL 103, and consent of department. Three hours lecture/discussion each week. Formerly CJ 255.*
3 semester hours

CHEM—Chemistry

CHEM 099 Introductory Chemistry
Topics include fundamental chemical mathematics, computational methods, metric system, matter, energy, chemical and physical properties, laws of conservation of mass-energy, foundations of atomic theories, elements, compounds, formulas, and stoichiometry. Other topics may be covered at the discretion of the instructor. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. For computation of tuition, this course is equivalent to three semester hours. Three hours each week. Formerly CH 099A.* *No credit/No quality points*

CHEM 109 Chemistry and Society *(NSND)*
Development of an understanding of the basic principles that are the foundations of chemistry; the significance of chemistry in our society; and the application of chemistry to environmental problems such as air and water pollution, food additives, solid waste recycling, and the energy resources of the earth. This course satisfies the General Education three-credit natural sciences distribution requirement. To satisfy the natural sciences lab distribution requirement, CHEM 109 and CHEM 109L must be taken concurrently. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly CH 109A.* *3 semester hours*

CHEM 109L Chemistry and Society Laboratory *(NSLD)*
Laboratory work deals with experiments that illustrate the significance of chemistry in our society and reinforces the principles discussed in CHEM 109. To satisfy the natural sciences lab distribution requirement, CHEM 109L must be taken either concurrently with CHEM 109 or within one calendar year after completing CHEM 109. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department.* PRE- or COREQUISITE: *CHEM 109. Three hours laboratory each week. Formerly CH 109B.* *1 semester hour*

CHEM 115 Survey of Organic and Biological Chemistry *(NSLD)* (TP/SS only)
Designed to meet the needs of both non-science majors and students entering allied health fields whose programs require one semester of an organic and biological chemistry course. This course is a survey of the fundamental concepts associated with organic and biological chemistry. Discussions of the physical and chemical properties of organic compounds provide the basis for introductory information about carbohydrates, lipids, proteins, and nucleic acids. The general properties of acids, bases, and buffers and nuclear chemistry are included. PREREQUISITES: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, and completion of one year of high school chemistry or MATH 080 within the past five years with a grade of C or better, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours lecture, three hours laboratory each week. Formerly CH 103.* *4 semester hours*

CHEM 131 Principles of Chemistry I (NSLD)
First of two related courses (with CHEM 132). Includes concepts of atomic structure, periodic system, chemical bonding, nomenclature, stoichiometry, weight relationships, kinetic-molecular theory, gases, liquids and solids, solutions, chemical reactions, and thermochemistry. PREREQUISITE: *Either appropriate score on the chemistry placement test, or a grade of C or better in CHEM 099 within the past two years, or consent of department.* PRE- or COREQUISITE: *MATH 093 or MATH 096 or appropriate score on the mathematics placement test. Assessment levels: ENGL 101/101A, READ 120. Three hours lecture, one hour discussion, three hours laboratory each week. Formerly CH 101.*
4 semester hours

CHEM 132 Principles of Chemistry II *(NSLD)*
A continuation of CHEM 131. Topics include solutions, chemical reactions, acid-base theories, electrochemistry, equilibrium, kinetics, nuclear chemistry, and thermodynamics. PREREQUISITE: *A grade of C or better in CHEM 131 or consent of department. Three hours lecture, one hour discussion, three hours laboratory each week. Formerly CH 102.*
4 semester hours

CHEM 135 General Chemistry for Engineers
Covers the nature and composition of matter, solutions, chemical reactions, equilibria, kinetics, thermodynamics, and electrochemistry with engineering applications. A one-semester general chemistry course designed for students majoring in engineering, except for biological resources engineering, chemical engineering, or general engineering majors. Not open to students who have completed CHEM 131 and CHEM 132. PREREQUISITES: *MATH 093, MATH 096 or a grade of C or better in MATH 117A or equivalent; completion within the last five years with a grade of C or better or one year of high school chemistry or CHEM 099 or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours lecture, one hour discussion, three hours laboratory each week. Formerly CH 135.* *4 semester hours*

CHEM 150 Essentials of Organic and Biochemistry *(NSLD)*
An introduction to organic chemistry emphasizing basic concepts and applications to biological systems. Course especially designed for the student needing a one-semester organic chemistry course. PREREQUISITE: *CHEM 131 or consent of department. Three hours lecture, four hours laboratory each week. Formerly CH 120.* *4 semester hours*

CHEM 203 Organic Chemistry I
This course focuses on fundamental concepts of organic chemistry with emphasis on aliphatic hydrocarbons, alkyl halides, and alcohols. This course covers bonding theories, structures, nomenclature, physical properties, synthesis, and mechanisms of reactions. Laboratory work involves the preparation, analysis, and purification of organic compounds including spectroscopic techniques. PREREQUISITE: *A grade of C or better in CHEM 132 within the last five years, or consent of department chair, course coordinator, or designated member of Chemistry faculty. Three hours lecture, one hour discussion, four hours laboratory each week. Formerly CH 203.*
5 semester hours

CHEM 204 Organic Chemistry II
This course is a continuation of CHEM 203 Organic Chemistry I with emphasis on aromatic compounds, alcohols, ethers, amines, and carbonyl compounds. Laboratory work reinforces organic synthesis techniques including isolation, purification, and structure determination using analytical methods. PREREQUISITE: *A grade of C or better in CHEM 203 within the last five years, or consent of department chair, course coordinator, or designated member of Chemistry faculty. Three hours lecture, one hour discussion, four hours laboratory each week. Formerly CH 204.* *5 semester hours*

CHIN—Chinese

CHIN 101 Elementary Chinese I
(HUMD[M])
Beginning language course focusing on the study of Chinese language and culture. Students begin to develop the ability to communicate in Chinese through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of Chinese is required. *In-class work is supplemented by 20 hours of listening and practice in the language learning laboratory. Five hours each week. Formerly CN 101. 5 semester hours*

CHIN 102 Elementary Chinese II
(HUMD[M])
A continuation of CHIN 101. Students continue to develop the ability to communicate in Chinese through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. *In-class work is supplemented by 20 hours of listening and practice in the language learning laboratory.* PREREQUISITE: *CHIN 101 or consent of department. Five hours each week. Formerly CN 102.*
5 semester hours

CHIN 201 Intermediate Chinese I
(HUMD[M])
Study of Chinese language and culture at the intermediate level. Students further their ability to communicate in Chinese through an advanced consideration of cultural themes and a thorough review of Chinese grammar to support increased focus on outside reading and writing. *In-class work is supplemented by 10 hours in the language learning laboratory.* PREREQUISITE: *CHIN 102 or consent of department. Five hours each week. Formerly CN 201.*
5 semester hours

CHIN 202 Intermediate Chinese II
(HUMD[M])
A continuation of CHIN 201. Students further their ability to communicate in Chinese through an advanced consideration of cultural themes and a review of Chinese grammar to support increased focus on outside reading and writing. *In-class work is supplemented by 10 hours in the language learning laboratory.* PREREQUISITE: *CHIN 201 or consent of department. Five hours each week. Formerly CN 202.*
5 semester hours

CMAP—Computer Applications

CMAP 100 Keyboarding Fundamentals
Development of touch keyboarding skills. Covers the touch operation of alphabetic, numeric, and symbol keys with emphasis on development of a basic, usable skill. No production of documents is included. This course is recommended for all students. *One hour each week. Formerly CA 100.*
1 semester hour

CMAP 106 Computer Use and Management
An introduction to computers, operating systems, and Internet basics. Topics include file and hard drive management, customizing the Windows environment, transferring data between applications, installing and running hardware and software, utilizing e-mail, and effectively finding, using, and downloading information, software, and research materials from the Internet. *Assessment levels: AELW 930/ENGL 002, AELR 930/READ 099. Three hours each week. Formerly CA 106.*
3 semester hours

CMAP 120 Introduction to Computer Applications CE
Introduces computer concepts and techniques applicable to various disciplines. The course covers the most widely used software packages while providing students hands-on experience with current computer applications. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Also, CMAP 106 or knowledge of Windows is strongly recommended. Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly CA 120.* *3 semester hours*

CMAP 125 Introduction to Flash
A survey of some of the predominant Web animation applications and technologies, such as Flash and ActionScript. This course begins with an overview of drawing and animation, and concludes with an introduction to scripting for Web interactivity and game development. Other Web enhancement applications may be taught depending on changes in technology. PREREQUISITE: *None, but previous computer experience strongly recommended. Assessment level: READ 120. Four hours each week. Formerly CA 125.* *4 semester hours*

CMAP 190 Introduction to Game and Simulation Development
Covers the gaming industry, careers, and the basic terminology. Topics include history of gaming; an industry overview; career paths, the state of the job market, and skills needed for success in various jobs; genres and platforms; societal issues; the study of games and "play;" the future of gaming; development of design, teamwork, business, and production skills. PREREQUISITE: *None, but previous computer experience strongly recommended. Assessment levels: ENGL 101/101A, READ 120. Four hours each week. Formerly CA 190.*
4 semester hours

CMAP 225 Flash ActionScript for Web Publishing and Gaming
Intended for Flash content developers who want to improve their skills. This course explores ActionScript techniques for visual interactivity and computer gaming. PREREQUISITE: *CMAP 125 or consent of department. Assessment level: MATH 093/096. Four hours each week. Formerly CA 225.*
4 semester hours

CMAP 232 Word Processing Applications
Designed to enable students to acquire and apply word processing skills by studying word processing software currently used in business. PREREQUISITE: *CMAP 120 or consent of department. A keyboarding speed of 30 words per minute is recommended. Three hours each week. Formerly CA 232.*
3 semester hours

CMAP 242 Introduction to Database Applications
Covers the creation, design, and use of databases for practical business applications. The course focuses on the functions of database applications and the design, maintenance, and manipulation of a database, including the design of simple queries, forms, and reports. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department.* PRE- or COREQUISITE: *CMAP 106 or consent of department. It is recommended that the student have experience with computer application packages. Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly CA 141.* *3 semester hours*

CMAP 245 Advanced Database Applications
Intended for the intermediate database user, this course covers topics such as subforms, integration of databases with other applications, customization, and macros. It also introduces VBA. Together with CMAP 242 this will create a complete and thorough database series. PREREQUISITE: *CMAP 242 or consent of department. Three hours each week. Formerly CA 240.* *3 semester hours*

CMAP 252 Spreadsheet Applications
Provides study in the creation, design, and use of spreadsheets for business applications. Emphasis focuses on formatting and enhancing spreadsheets, maintaining workbooks, working with lists, using appropriate functions, interpreting data, and template design. PREREQUISITE: *CMAP 120 or successful completion of the departmental skills assessment. Three hours each week. Formerly CA 252.*
3 semester hours

CMAP 269 Computer Applications Internship
(Also listed as CMSC 269. Credit cannot be received for both CMAP 269 and CMSC 269.)
Students work for college credit in a professional environment related to their particular track in the computer applications program. The intent is to give students an appropriate work experience that will expand their knowledge and aid them in making career decisions. A limited number of internships are available through the program each semester, or the student may propose an internship. A comprehensive record of the work experience is kept by the student and discussed in seminar meetings. PREREQUISITE: *Consent of internship coordinator and a minimum of 12 semester hours in program area. An internship will involve a minimum of five hours of work experience per semester hour each week for 15 weeks. Eight hours of seminar discussions each semester. May be repeated for a maximum of four credits. Formerly CA 269.*
1–4 semester hours

CMAP 272 Professional Website Development
Provides instruction for creating, uploading, and maintaining professional-quality websites containing graphics, style sheets, mulitmedia, and other basic enhancements using hand-coded XHTML as well as Adobe Dreamweaver's fundamental tools. Topics include website development and emerging Internet technologies and trends. PRE- or COREQUISITE: *Any CMAP, CMSC, GDES course that is two credits or more, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Four hours lecture/discussion each week. Formerly CA 272.*
4 semester hours

CMAP 273 Advanced Professional Web Technologies
Explores latest advanced web technologies and development skills with XHTML, Cascading Style Sheets, web standards, basic server side programming with PHP and/or ColdFusion, usability and accessibility, JavaScript, and Dreamweaver. Students make websites attractive, dynamic, accessible, and easy to maintain. PREREQUISITE: *CMAP 272 or successful completion of the departmental skills assessment. Three hours lecture/discussion* each week. *Formerly CA 273.* *3 semester hours*

CMAP 274 Web Content Management Systems and Strategy
An introduction to Content Management Systems (CMS) for the web with a focus on content strategy. Course topics include strategy, types of CMS, the use and customization of plug-ins and add-ons, as well as building themes and dynamic content for cross-platform delivery. Students will learn how to audit content for a website, choose an appropriate CMS, and convert a static design into a dynamic CMS-powered site. No programming experience is required, although knowledge of a modern web programming language is helpful. Knowledge of HTML and CSS is assumed. PREREQUISITE: *CMAP 272 or consent of department. Three hours each week. Formerly CA 274.*
3 semester hours

CMAP 276 JavaScript Fundamentals
A study of JavaScript language used to create dynamic and interactive web content. In this introductory course, students will learn the fundamentals of working with the behavior layer of web development using JavaScript. Students will learn scripting basics. the principles of unobtrusive and cross browser scripting, how to navigate and manipulate the Document Object Model (DOM), and how to use JavaScript libraries to improve web development. PREREQUISITE: *CMAP 272 or consent of department. Three hours each week. Formerly CA 276.* *3 semester hours*

CMAP 277 Advanced JavaScript
Continues with JavaScript features introduced in CMAP 276, emphasizing web development utilizing open source libraries. In this advanced course, students will learn how to build highly interactive web interfaces and applications, known as Rich Internet Applications (RIAs), using advanced JavaScript techniques. Upon completion of this course students will learn how to design and develop RIAs with jQuery Core, jQuery UI, and Ajax as well as explore XML versus JSON (JavaScript Object Notation). PREREQUISITE: *CMAP 276 or consent of department. Three hours lecture/discussion each week. Formerly CA 277.*
3 semester hours

CMAP 278 Web Application Development Using ColdFusion
A hands-on introduction to web database applications using ColdFusion. Topics include creating a simple database, connecting a server-side database to a webpage, viewing, sorting, updating, and searching a database through the client-side interface, creating and customizing reusable code, integrating an e-mail facility, and maintaining site security through user logins and limiting site access. PREREQUISITE: *CMAP 272 or consent of department. Four hours lecture/discussion each week. Formerly CA 278.* *4 semester hours*

CMAP 282 Web Application Development Using PHP and MySQL
An introduction to the creation and maintenance of data-driven websites using PHP and MySQL. Create a MySQL database and maintain the database dynamically using the programming language PHP. PREREQUISITE: *CMAP 278, CMSC 140 or consent of department. Three hours lecture/discussion each week. Formerly CA 282. 3 semester hours*

CMAP 288 Advanced Web Application Development Using ColdFusion
A hands-on exploration of advanced web application design and construction using ColdFusion. Students learn the basics of creating an e-commerce site by building a fully operational storefront, shopping cart, and sales reporting system. Topics include creating and using complex variables, maintaining state, reusing code, creating user-defined and full-text search facilities, building interactive data-driven graphs, and integrating an automatic e-mail facility. PREREQUISITE: *CMAP 278 or consent of department. Three hours lecture/discussion each week. Formerly CA 288.*
3 semester hours

CMAP 290 Building Game Worlds: Level Design, Mods, and Quality Assurance
Topics include level design, game modifications ("mods"), quality assurance and testing. Provides an overview of level design and testing, two of the most common entry-level positions in the game industry. Mods, based on existing game engines, vary from individual hobby activities to AAA-published titles like Counterstrike (originally created by college students), and are a powerful tool in an aspiring game developer's portfolio. PREREQUISITE: *CMAP 190, or successful completion of the departmental skills assessment. CMAP 225 are recommended but not required. Assessment levels: ENGL 101/101A, READ 120. Four hours each week. Formerly CA 195.* *4 semester hours*

CMAP 299 Web Certificate/Degree Portfolio
This capstone course for the web careers certificate/degree provides the opportunity to produce a professional print and/or web-based portfolio and résumé. Students work on a web development team to design and implement a prototype website for a local small business or nonprofit organization. Topics include content development, universal website design, project management, usability practices, résumé and portfolio preparation, and effective writing for the Web. PREREQUISITE: *Consent of department. Three hours lecture/discussion each week. Formerly CA 299.*
3 semester hours

CMGT—Construction Management

CMGT 100 Construction Methods and Materials (R only) **CE-R**
Covers the characteristics, specifications, properties, terminology, and use of construction materials. The course emphasizes principles and methods for the selection and application or installation of materials and building components rather than development and production of materials. Laboratory experiences focus on the analysis, use, limitations, testing, and practical application of selected construction materials. *Assessment levels: ENGL 002, READ 120. Three hours lecture/discussion, one hour laboratory each week. Formerly CT 130.*
3 semester hours

CMGT 110 Construction Plan Reading (R only) **CE-R**
Covers construction documents, with emphasis on interpreting contract drawings. Topics include terminology, symbols, and conventions used in both commercial and residential drawings; methods and procedures for reading basic architectural and structural drawings; and introduction to mechanical and electrical drawings. *Assessment levels: ENGL 002, READ 120. Three hours lecture/discussion, one hour laboratory each week. Formerly CT 131.*
3 semester hours

CMGT 135 Construction Field Operations (R only) **CE-R**
Introduces field management from the superintendent's standpoint. Topics include job site analysis and planning, utilization of equipment, labor and material coordination, records and documentation, field scheduling, safety methods and programs, production efficiency and improvement, leadership and motivation, communications, and human relations. Site visitations and laboratory experiences supplement class discussions. *Assessment levels: ENGL 002, READ 120. Three hours lecture/discussion, one hour laboratory each week. Formerly CT 135.* *3 semester hours*

CMGT 190 Computer Applications in Construction (R only)
Reviews software applications in construction project management, administration, estimating, scheduling, and cost control. Topics include an introduction to software packages used in subsequent courses, and Internet applications in construction. PREREQUISITE: *CMAP 120 or consent of department. Two hours lecture, two hours laboratory each week. Formerly CT 190.* *3 semester hours*

CMGT 210 Construction Management (R only) **CE-R**
Covers all phases of construction project management. The course introduces the procedures, responsibilities, methodology, and techniques utilized in the construction management process. Topics include an overview of the construction and design industries, company organization, construction contracts and project delivery methods, project chronology, bidding procedures, construction estimating, scheduling, cost control, field operations, safety standards and procedures, and project administration. The course includes a general overview of the use of computers in project management. PREREQUISITE: *CMGT 135 or consent of department. Three hours each week. Formerly CT 212.* *3 semester hours*

CMGT 250 Construction Surveying (R only) **CE-R**
Introduces typical surveying methods and layouts. The course emphasizes the physical requirements of construction operations as viewed from the project superintendent's standpoint in order to maintain control and proper work placement. Topics include mathematics and formulas required to perform layout functions; use of layout equipment; establishment and measurement of lines and elevations, measurement of angles, common building layout; basic grading layout; and coordination of layout and drawings. Laboratory focuses on fieldwork, implementation of class theory, and equipment use. PREREQUISITES: *CMGT 100, CMGT 135, and MATH 098; or consent of department. Two hours lecture, two hours laboratory each week. Formerly CT 271.* *3 semester hours*

CMGT 270 Construction Estimating (R only) **CE-R**
Introduces methods of construction estimating and estimates. The course covers the stages of preparing construction estimates and construction document analysis. Topics include an estimator's qualifications and role of the estimating team, the process, accuracy, consolidation and bid preparation, submittal and cost analysis. The course emphasizes quantity take-offs of general conditions, sitework, concrete, masonry, structural steel, wood and plastics, thermal and moisture control, and finish materials, as well as the use of computer estimating. PREREQUISITES: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, and CMGT 100 and CMGT 110, or consent of department. Three hours lecture, one hour laboratory each week. Formerly CT 284.*
3 semester hours

CMGT 272 Construction Estimating with Computers (R only)
Using computers, students will receive hands-on instruction in construction estimating. Topics covered include setting up an estimate, performing quantity take-off in its different forms, spreadsheet editing, customizing and revising the estimate, and creating and manipulating reports. The students will also be introduced to advanced concepts of computer estimating software. PREREQUISITE: *CMGT 270 or consent of department. Ten hours lecture, ten hours laboratory each semester. Formerly CT 292.*
1 semester hour

CMGT 274 Preconstruction Estimating (R only)
Introduces students to available techniques for developing a construction estimate during the preconstruction stages of a project. Topics include manual procedures to develop order of magnitude estimates and computer alternatives to develop conceptual estimates. PREREQUISITE: *CMGT 270 or consent of department. Ten hours lecture, ten hours laboratory each semester. Formerly CT 293.*
1 semester hour

CMGT 275 Construction Planning and Scheduling (R only) **CE-R**
Reviews and analyzes requirements and preparation of construction planning and scheduling. Topics include scheduling techniques in resource leveling, equipment allocation, time-cost relationships, and monitoring/controlling work progress. The course incorporates the use of computers in the planning and scheduling process. PREREQUISITES: *CMGT 100 and CMGT 210, or consent of department. Two hours lecture, two hours laboratory each week. Formerly CT 286.*
3 semester hours

CMGT 280 Mechanical and Electrical Systems (R only)
Studies materials and equipment used in heating, ventilating, air conditioning, electrical power, lighting, water supply, and sewage disposal systems in buildings. The scope of the course ranges from selection of necessary equipment to the development and coordination of mechanical, electrical, and related drawings. *Assessment levels: ENGL 002, MATH 093/096, READ 120. Three hours lecture, one hour laboratory each week. Formerly CT 283.*
3 semester hours

CMGT 285 Practical Construction Law (R only)
This course is designed to acquaint the student with an understanding of the major legal issues affecting the construction industry. It is designed to provide the student with enough basic knowledge to understand the numerous contractual relationships that exist on a construction project; to recognize the basic varieties of claims and disputes that may arise; to obtain an understanding of the basic legal principles used to avoid, mitigate, or resolve construction disputes; and to achieve an appreciation of the practical legal considerations in addressing the relationships between the parties on a construction project. PREREQUISITE: *CMGT 210. Three hours each week. Formerly CT 288.*
3 semester hours

CMGT 290 Professional Practicum (R only)
Work experience and field study on an actual project related to the student's curriculum. Participation supervised by the instructor and appropriate personnel at work. A comprehensive record of the work experience is kept by the student and discussed in seminar meetings. PREREQUISITE: *Second-year standing in curriculum. Eight hours of seminar discussions each semester and a minimum of 80 hours of work experience required per semester hour. A student may not accumulate more than four semester hours in this course. Formerly CT 299. 1 semester hour*

CMSC—Computer Science and Technologies

CMSC 100 Fundamentals of Computer Programming
Designed for students with no prior programming experience, this course introduces students to fundamental structures of sequence, selection, and repetition, emphasizes solving simple problems using a flowchart. With a high-level language, students code, test, and debug short programs. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Two hours each week. Formerly CS 100.*
2 semester hours

CMSC 110 Computer Concepts
An introduction to the scope, significance, history, and social implications of data processing. Study of programming language hierarchy, elements of a software system, and program implementation. Exposure to hardware concepts including number systems, data representation, central processor, storage, input/output, and system configurations. There is no detailed study or implementation of any specific programming language. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly CS 110.*
3 semester hours

CMSC 140 Introduction to Programming
Introduces programming and problem solving using a contemporary programming language. Topics include principles of procedural programming, software development and debugging techniques, control structures, data types, functions, one-dimensional arrays, and file processing. Using a computer, students complete required lab assignments. *Assessment levels: ENGL 101/ 101A, MATH 093/096, READ 120. Three hours each week. Formerly CS 140.* *3 semester hours*

CMSC 201 Java Programming Language
Comprehensively covers Java programming environment and features. Topics include techniques of program structure, design, and type. Using the Java language, students code, load, execute, debug, and document programs. PREREQUISITE: *A grade of C or better in CMSC 140 or consent of department. Three hours each week. Formerly CS 213.*
3 semester hours

CMSC 203 Computer Science I (R only)
Fundamental computer concepts. Studies methods of object-oriented program development and design. The course also covers language systems and semantics, structured program verification, different language paradigms, and documentation techniques. Students use a structured, high-level object-oriented programming language and learn to use both text-oriented and Windows-based user interfaces. Designing and implementing solutions to intermediate-level programming assignments are an integral part of the course. PREREQUISITE: *A grade of C or better in CMSC 140 or consent of department.* PRE- or COREQUISITE: *MATH 181. Four hours each week. Formerly CS 103.*
4 semester hours

CMSC 204 Computer Science II (R only)
Continues ideas introduced in CS 103, emphasizing writing larger programs and designing and implementing classical abstract data types such as list, stack, queue, binary search tree, graph, priority queue, hash table. Topics include string processing and recursion; data abstraction, encapsulation, and structure implementation; object-oriented program design; specification, implementation and application of these traditional ADTs. The course also emphasizes dynamic memory allocation, search and sorting algorithms, and introduces algorithm complexity. Designing and implementing advanced-level programming assignments are an integral part of the course. PREREQUISITE: *A grade of C or better in CMSC 203.* PRE- or COREQUISITE: *MATH 182. Four hours each week. Formerly CS 204.*
4 semester hours

CMSC 207 Introduction to Discrete Structures (R only)
An introduction to discrete structures as they relate to computer science. The course will stress computer science applications and will include relations, functions and algorithms, Naive Set Theory, combinatorics, logic, and mathematical induction. PREREQUISITES: *ENGL 101/101A or appropriate score on English assessment test, and MATH 182. Four hours each week. Formerly CS 256.*
4 semester hours

CMSC 214 Advanced Java Programming
Explores Java Application Program Interface (API) and covers the latest release of Java including input and output, multithreading, networking, database connectivity, remote objects, security, Java Beans, and Java Foundation Classes. PREREQUISITE: *A grade of C or better in CMSC 201 or consent of department. Three hours each week. Formerly CS 214.*
3 semester hours

CMSC 220 Client-Server Programming with Java
Examines major topics in the development of applications for the World Wide Web: website development using HTML and related standards, implementation of client-side applications using Java programming language, and design of server-side web applications. PREREQUISITE: CMSC 201 *or consent of department. Three hours each week. Formerly CS 220.* *3 semester hours*

CMSC 222 Visual Programming
Concerns with writing programs for the Windows programming environment, including developing an application, tools, forms, the user interface, programming, built-in functions, procedures, arrays, records, testing, and debugging. Emphasis is on rapid development of useful applications. PREREQUISITE: *A grade of C or better in CMSC 140 or consent of department. Three hours each week. Formerly CS 215.* *3 semester hours*

CMSC 224 Developing Web Applications Using C# and ASP.NET
Examines developing web applications using C# and ASP.NET, and introduces web services. Students create applications using tools such as web Forms, Visual Studio.NET, ASP.NET, and ADO.NET. Students also optimize applications using configuration, security, and caching. PREREQUISITE: *CMSC 140 or consent of department. Three hours each week. Formerly CS 224.*
3 semester hours

CMSC 226 Introduction to Object-Oriented Programming with C++
This course introduces students to C++ syntax and programming techniques such as decisions, loops, arrays, pointers, functions, and file processing. Covers object-oriented concepts such as data abstraction, classes, objects, overloading, and inheritance. Students complete required computer lab assignments. PREREQUISITE: *A grade of C or better in CMSC 140 or consent of department. Three hours each week. Formerly CS 226.* *3 semester hours*

CMSC 230 Advanced Object-Oriented Programming with C++
This course examines more advanced topics in object-oriented programming with C++ such as dynamic memory allocation, various data structures, recursion, and object-oriented design. Students are required to complete lab assignments using a computer. PREREQUISITE: *A grade of C or better in CMSC 226 or consent of department. Three hours each week. Formerly CS 249.* *3 semester hours*

CMSC 234 Mobile Game and Application Programming
Focuses on building computer applications and games that can run on mobile devices supporting Java language and other technologies. Content includes an overview of mobile development, design user interface for mobile devices, data storage and operations, animation, sound, Internet connectivity, and other topics related to the mobile programming. PREREQUISITE: *CMSC 201 or consent of department. Three hours each week. Formerly CS 261.* *3 semester hours*

CMSC 237 Introduction to iPhone Programing Using Objective C
Introduces the architecture, design and development of applications that run on smart phones utilizing the iOS operating system and using Object-oriented programming language Objective-C. Topics include Introduction to the Objective-C programming language, mobile application design patterns, application frameworks and adaptation to specific devices. PREREQUISITE: *A grade of C or better in CMSC 140 or consent of department. Three hours each week. Formerly CS 262.*
3 semester hours

CMSC 240 Advanced Mobile App and Game Development
Provides advanced mobile programming for iPad and Android tablets. A hands-on advanced object-oriented programming using Objective-C and Java. The aim is to design, implement, test, debug, and document programs using integrated development platform and other appropriate tools. PREREQUISITE: *A grade of C or better in CMSC 234 or CMSC 237 or consent of department. Three hours each week. Formerly CS 263.* *3 semester hours*

CMSC 243 Systems Analysis and Design
Exploration of the nature of systems work including studies, analysis, design, implementation, and evaluation. Introduction to the tools used in and techniques applied to systems development. A practical approach is emphasized and a systems study is expected of each student. PREREQUISITE: *CMSC 110 or consent of department. Three hours each week. Formerly CS 136.* *3 semester hours*

CMSC 246 Introduction to SQL Using Oracle
Covers the concept, design, architecture, and components of the Oracle database system and SQL (Standard Query Language). Topics include the database design, the data definition language, the data manipulation language, the data control language, the basics of SQL*PLUS, and the standard SQL. Students create database tables, implement business requirements utilizing constraints, and develop complex queries using features such as join, union, and subqueries. *Assessment levels: ENGL 101/101A, MA 093/096, READ 120. Three hours each week. Formerly CS 270. 3 semester hours*

CMSC 250 UNIX/LINUX Operating System
Presents an overview of the components, structure, and features of the UNIX operating system. Students experience hands-on operation of the interrelating UNIX operating system components. Projects of moderate difficulty reinforce concepts. PREREQUISITE: *A grade of C or better in CMSC 140 or consent of department. Three hours each week. Formerly CS 216. 3 semester hours*

CMSC 253 UNIX/LINUX System Administration (G only)
Introduction to concepts, procedures, tasks, and utilities of UNIX/LINUX system administration. Topics include UNIX/LINUX system architecture, user administration, process management, software installation and management, hierarchy, creation, and management of file systems, device configuration and management as well as networking fundamentals. PREREQUISITE: *CMSC 110 or NWIT 127, or consent of department. Four hours each week. Formerly CS 253. 4 semester hours*

CMSC 260 Computer Security
Surveys major topics in assessment and development of security procedures for a variety of computer systems. The course emphasizes security needs, risk assessment, and practical measures for security management. Topics include Internet and web security, LAN security, protection of personal computers, physical security, hardware and software protection and products, virus countermeasures, and the human aspects of computer security. PREREQUISITE: *CMSC 110 or consent of department. Three hours each week. Formerly CS 210.*
3 semester hours

CMSC 269 Computer Science and Technologies Internship
(Also listed as CMAP 269. Credit cannot be received for both CMAP 269 and CMSC 269.)
Students work for college credit in a professional environment related to their particular track in the computer science and technologies program. The intent is to give students an appropriate work experience that will expand their knowledge and aid them in making career decisions. A limited number of internships are available through the program each semester, or the student may propose an internship. A comprehensive record of the work experience is kept by the student and discussed in seminar meetings. PREREQUISITES: *Consent of internship coordinator and a minimum of 12 semester hours in program area. An internship will involve a minimum of five hours of work experience per semester hour each week for 15 weeks. Eight hours of seminar discussions each semester. May be repeated for a maximum of four credits. Formerly CS 269.*
1–4 semester hours

CMSC 299 Special Topics in Computer Science and Technologies
These courses focus on varied topics in computer science and technologies, presented as a result of technological change or community or student interest, that include a variety of computer-related skills or intensive study in a specific area of computer science and technologies. Topics are announced each semester in the class schedule. Course may be repeated for different topics. PREREQUISITE: *Depends on topic. Assessment level: Depends on topic. Minimum of 15 hours of instruction for each credit hour. Formerly CS 206.*
1–3 semester hours

COED—Cooperative Education

COED 260 Cooperative Education I
Provides a supervised work experience to help the student develop good work habits, attitudes, and career exploration skills. Student, instructor, and employer cooperatively develop a minimum of three learning objectives that the student must complete. The student will attend three seminars and complete a minimum of 75 hours of approved work experience per semester hour. PREREQUISITES: *A grade point average of 2.0, 12 semester hours of college coursework, 6 semester hours in the student's curriculum, and approval from the director of cooperative education. This course may not be repeated. Formerly CE 260.* *1–3 semester hours*

COED 261 Cooperative Education II
Provides a supervised work experience to enhance a student's college education by providing the student with desirable work habits, attitudes, and further career exploration. Student, instructor, and employer cooperatively develop a minimum of three learning objectives that the student must complete. The student will attend three seminars and complete a minimum of 75 hours of approved work experience per semester hour. PREREQUISITES: *A grade point average of 2.0, 18 semester hours of coursework in the student's curriculum, a grade of C or better in COED 260, and approval from the director of cooperative education. This course may not be repeated. Formerly CE 261.*
1–*3 semester hours*

COMM—Speech

COMM 108 Introduction to Human Communication *(SPCF)*
A survey course that covers communication theory and develops communication skills for personal and professional relationships in interpersonal, group, and public settings. Course content includes practice in the application of the principles of listening, verbal and nonverbal communication, group dynamics, and public speaking. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly SP 108.* *3 semester hours*

COMM 109 Voice and Diction CE-TP/SS
The skills of voice and diction studied through an analysis of the individual's voice quality, articulation, pronunciation, and enunciation. Drills and exercises stressed. *Assessment level: AELR 930/ READ 099. Three hours lecture, two hours laboratory each week. Formerly SP 109.* *3 semester hours*

COMM 112 Business and Professional Speech Communication *(SPCF)*
A study of communication theory as applied to business and organizational environments. Emphasis on development of effective communication skills for professional situations including team building, interviewing, public speaking, and accommodating diverse perspectives. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly SP 112.*
3 semester hours

COMM 121 Public Speaking (R only)
Practice of major types of public speaking, including speeches to inform, persuade, and demonstrate; and speeches for special occasions. *Assessment levels: ENGL 101/ 101A, READ 120. Three hours each week. Formerly SP 111.*
3 semester hours

COMM 204 Interpersonal Communication (R only)
Designed to increase understanding of personal communication behaviors, establish potential for improved communication capabilities, develop an effective sense of self in human encounters, and strengthen personal identity and social involvement through personal communication. PREREQUISITE: *COMM 108 or consent of department. Three hours each week. Formerly SP 204.*
3 semester hours

COMM 220 Small Group Communication
An introduction to the principles and stages of small group communication, including problem solving, decision making, leadership, norms, member roles, and conflict resolution. Students will work extensively in groups to test theories, practice skills, and gain competency. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly SP 205.* *3 semester hours*

COMM 250 Introduction to Communication Inquiry and Theory
An introduction to the field of communication. Definitions, models, and contexts of communication are examined. Students are introduced to the research process in the field of communication and learn how the process relates to the development of communication theory. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly SP 250.* *3 semester hours*

DANC—Dance

DANC 100 Introduction to Dance *(ARTD)* (R and TP/SS only)
An examination of dance as an art form and means of multicultural expression, ritual, and tradition. This course familiarizes the student with practices, philosophies, terminologies, styles of dance and careers in dance. The role of dance in world societies and how it relates to different cultures is explored through lectures, assigned readings, films, recordings, and experiential dance activities. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly DN 100.*
3 semester hours

DANC 101 Ballet I (R and TP/SS only)
An introduction to fundamental exercises, techniques, and steps of classical ballet. Basic ballet terminology, correct body alignment, and simple adagio and allegro combinations are introduced in barre and center work. May be selected to fulfill physical education credits. *One hour lecture, two hours laboratory each week. Formerly DN 101.*
2 semester hours

DANC 102 Ballet II (R only)
Further study of classical ballet as offered in DANC 101. Emphasis on developing an aesthetic awareness of the art, understanding ballet theory, and perfecting technique. Review of basic exercises and terminology. Pirouettes and petite batterie are introduced. PREREQUISITE: *DANC 101 or consent of department. May be repeated for a maximum of six credits with consent of department. One hour lecture, four hours laboratory each week. Formerly DN 102.*
3 semester hours

DANC 103 Modern Dance I (R and TP/SS only)
An introduction to fundamental exercises, techniques, and movement phrases of modern dance. Basic modern dance principles are introduced in axial and locomotor exercises and basic improvisation skills. Modern dance innovators and their styles are discussed. May be selected to fulfill physical education credits. *One hour lecture, two hours laboratory each week. Formerly DN 103.*
2 semester hours

DANC 104 Modern Dance II (R only)
Further study of modern dance as offered in DANC 103. Includes an understanding of contemporary dance as a creative art form, perfecting technique, developing improvisational skills, experimenting with creative movement studies, and analyzing rhythmic patterns. Review of basic exercises and terminology. PREREQUISITE: *DANC 103 or consent of department. May be repeated for a maximum of six credits with consent of department. One hour lecture, four hours laboratory each week. Formerly DN 104.* *3 semester hours*

DANC 105 Jazz Dance I (R and TP/SS only)
An introduction to fundamental jazz exercises, techniques, and styles. Basic jazz dance principles are introduced, including body isolations, flexibility exercises, and movement phrases. May be selected to fulfill physical education credits. *One hour lecture, two hours laboratory each week. Formerly DN 105.* *2 semester hours*

DANC 106 Jazz Dance II (R only)
Further study of jazz dance as offered in DANC 105. Emphasis on perfecting technique, creating advanced-beginning jazz compositions, and developing a more in-depth understanding of the essence and components of jazz dance. Emphasis is placed on advanced-beginning steps and terminology, including double turns, body isolations, and elevation steps. PREREQUISITE: *DANC 105 or consent of dance program coordinator. One hour lecture, four hours laboratory each week. Formerly DN 106.*
3 semester hours

DANC 107 Tap Dance I (R and TP/SS only)
An introduction to basic tap techniques, exercises, movements, and improvisational skills. A variety of rhythmic patterns and fundamental steps such as shuffles, ball changes, heel drops, time steps, flaps, and beginning turns are introduced. Tap dance history and styles will be discussed. May be selected to fulfill physical education credits. *One hour lecture, two hours laboratory each week. Formerly DN 107.* *2 semester hours*

DANC 108 Tap Dance II (R only)
Further study of tap dancing as offered in DANC 107. Emphasis on developing on-stage choreography. Further development of pre-dance warm-up exercises to include exercises for balance and body alignment. Turns, rhythm manipulation, and choreographic principles are developed through tap combinations. PREREQUISITE: *DANC 107 or consent of dance program coordinator. One hour lecture, four hours laboratory each week. Formerly DN 108.*
3 semester hours

DANC 110 Stretch and Alignment (R only)
This course is designed for dancers, performers, athletes, and ordinary persons who would be introduced to principles and techniques of stretch and alignment. Emphasis is placed on techniques that result in greater muscle length, increased tension release, and improved body posture. This course cannot be taken in place of any dance technique course. No limit on the number of times this course can be repeated. *Two hours laboratory each week. Formerly DN 110.* *1 semester hour*

DANC 120 Rhythmic Training for the Dancer (R only)
An introduction to basic elements of rhythmic principles related to movement and dance. Rhythmic fundamentals, basic music theory, and elementary music scoring and reading are studied. Appropriate accompaniment for dance is discussed. A brief look at past and present well-known music composers who have composed music for dance is presented. *Assessment levels: EN 002, AELR 930/READ 099. One hour lecture, two hours laboratory each week. Formerly DN 120.*
2 semester hours

DANC 200 Introduction to Dance Composition (R only)
The study of basic choreographic elements and principles in order to analyze and construct dance compositions. Through the use of improvisation, movement exploration, and the understanding and application of both traditional and experimental dance forms, the student will compose original solo and group studies. Various works will be shown in either studio performance or formal dance concerts. PREREQUISITES: *DANC 104 or higher and DANC 120 or equivalent. Three hours each week. Formerly DN 150.* *3 semester hours*

DANC 201 Ballet III (R only)
The development and execution of classical ballet technique on an intermediate level. Concentration is on body alignment, technical accuracy, increased movement vocabulary, and performance quality. Pirouettes, petite batterie, and petit and grand allegro are stressed. PREREQUISITE: *DANC 102 or consent of department. May be repeated for a maximum of six credits with consent of department. One hour lecture, four hours laboratory each week. Formerly DN 201.*
3 semester hours

DANC 202 Ballet IV (R only)
Progression of classical ballet training as presented in DANC 201. Emphasis is on increased technical skill through the introduction of complex adagio and allegro combinations. Musicality, style, and theatricality are stressed. PREREQUISITE: *DANC 201 or consent of department. May be repeated for a maximum of six credits with consent of department. One hour lecture, four hours laboratory each week. Formerly DN 202.* *3 semester hours*

DANC 203 Modern Dance III (R only)
The study of contemporary modern dance on an intermediate level. Correct body alignment, development of technique, and efficient use of the body through movement are stressed. Various falls, turns, and contractions are studied. Elements of time, flow, weight, space, and varied rhythmic structures are incorporated into movement phrases. Improvisational skills are employed. PREREQUISITE: *DANC 104 or consent of department. May be repeated for a maximum of six credits with consent of department. One hour lecture, four hours laboratory each week. Formerly DN 203.*
3 semester hours

DANC 204 Modern Dance IV (R only)
A progression of contemporary dance as presented in DANC 203. Emphasis is on more complex movement phrases. Individual expression, musicality, style, and performance are stressed. Improvisational skills are employed. PREREQUISITE: *DANC 203 or consent of department. May be repeated for a maximum of six credits with consent of department. One hour lecture, four hours laboratory each week. Formerly DN 204.*
3 semester hours

DANC 205 Jazz Dance III (R only)
The study of jazz dance on an intermediate level. Proficient technique, correct body alignment, and performance are stressed. Jazz isolations, triple turns, rhythmic sequences, and slides are studied in addition to high elevation steps. PREREQUISITE: *DANC 106 or consent of dance program coordinator. One hour lecture, four hours laboratory each week. Formerly DN 205.* *3 semester hours*

DANC 206 Jazz Dance IV (R only)
A progression of jazz dance as a continuation of concepts and styles presented in DANC 205. Increased technical skill is developed through complex phrases of movement. Performance, style, and musicality are stressed. PREREQUISITE: *DANC 205 or consent of department. May be repeated for a maximum of six credits. One hour lecture, four hours laboratory each week. Formerly DN 206.*
3 semester hours

DANC 270 Special Topics in Dance (R only)
Topics in dance presented as a result of community or student interest, to include a variety of dance-related skills or intensive study in a specific area. Topics to be announced each semester in the class schedule. PREREQUISITES: *A grade of B or better in any two of the following DANC courses: 102, 104, 106, 108, 201, 202, 203, 204, 205, 206; and consent of dance program coordinator. Assessment levels: ENGL 101/101A, READ 120. One hour lecture, four hours laboratory each week. Formerly DN 220.*
3 semester hours

DANC 280 Special Dance Practicum (R only)
Offered on an individual basis to dance majors with advanced standing. Students may extend their studies by exploration of a particular specialization within the curriculum. PREREQUISITE: *Consent of department. Assessment levels: ENGL 101/101A, READ 120, or consent of department. May be repeated for a maximum of six credits with consent of department. One hour lecture, four hours laboratory each wee Formerly DN 230.* *3 semester hours*

DANC 290 Dance Internship (R only)
Students work for college credit in a professional dance studio, dance organization, or dance association. A limited number of internships are available through the program each semester. In addition, students may propose an internship. PREREQUISITES: *A grade of B or better in any two of the following DANC courses: 102, 104, 106, 108, 201, 202, 203, 204, 205, 206; and consent of dance program coordinator. Assessment levels: ENGL 101/101A, READ 120. One hour lecture, six hours practicum each week. Formerly DN 240.* *3 semester hours*

ECON—Economics

ECON 103 The Evolution of Economic Societies *(BSSD[M])* **CE-R**
This course is an introduction to the evolution of Western and non-Western economic societies. Different approaches to the organization of economic activities by culturally diverse societies are emphasized. Specific economic changes in Western Europe and the United States leading to the emergence of the market system are traced. The emergence of economic thought and methods, from mercantilism to Keynes, is included. Students will review various adaptations of the market system by distinct cultures leading to the present interconnected world economy. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly EC 103.* *3 semester hours*

ECON 105 Basic Economics *(BSSD)* **CE-R**
One-semester introduction to macroeconomics and microeconomics. The emphasis will be placed on basic economic theory and its application. This course is not intended for students majoring in economics or business administration. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly EC 105.*
3 semester hours

ECON 201 Principles of Economics I
(BSSD) **CE-R**
Covers macroeconomic theory half of a one-year course in economics including central problems of economic society, supply, and demand; national income and product; saving, consumption, and investment; income determination; money supply and deposit creation; monetary and income analysis and alternative economic systems. PREREQUISITE: *High school algebra or its equivalent or consent of department. Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly EC 201.* *3 semester hours*

ECON 202 Principles of Economics II
(BSSD) **CE-R**
Covers microeconomic theory half of a one-year course in economics including supply and demand; demand and utility; analysis of costs and long-run supply; problems of agriculture; profit maximization; imperfect competition; theory of production; pricing of factor inputs; interest; international trade; and current economic problems, such as poverty, affluence, race, cities, and polluted environment. PREREQUISITE: *High school algebra or its equivalent or consent of department. Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly EC 202.* *3 semester hours*

EDUC—Education

EDUC 050 Praxis I Reading/Writing Test Preparation
Passing scores on Praxis I: Pre-Professional Skills Test (or another Maryland state-mandated basic skills assessment) are required to earn the Associate of Arts in Teaching degree, as well as for entry into any teacher certification program in Maryland. This course is designed to help prepare students to successfully complete the reading and writing portions of the Praxis I. Reviews reading and writing skills necessary for the exam plus builds test-taking skills and strategies. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. For computation of tuition, this course is equivalent to one semester hour. One hour each week. Formerly ED 050.*
No credit/No quality points

EDUC 051 Praxis I Mathematics Test Preparation
Passing scores on Praxis I: Pre-Professional Skills Test (or another Maryland state-mandated basic skills assessment) are required to earn the Associate of Arts in Teaching degree, as well as for entry into any teacher certification program in Maryland. This course is designed to help prepare students to successfully complete the mathematics portion of the Praxis I. Reviews key mathematics concepts included in the exam plus builds test-taking skills and strategies. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. For computation of tuition, this course is equivalent to one semester hour. One hour each week. Formerly ED 051.*
No credit/No quality points

EDUC 101 Foundations of Education
This introductory course covers the historical, legal, philosophical, social, and practical aspects of American education. Students evaluate current educational trends, issues, and practices. They also explore teaching as a career and other career opportunities in contemporary education. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly ED 101.* *3 semester hours*

EDUC 102 Field Experience in Education
Provides a structured field-based experience for students to observe teachers and students in local public schools. Applying concepts learned in EDUC 101 or PHED 203, students reflect on the teaching and learning process. Experiences in small group and individual instruction provide a transition from theory to practice. Attendance at on-campus and school site orientations required before beginning observations. PRE- or COREQUISITE: *EDUC 101 or PHED 201. Five hours lecture and thirty hours practicum each semester. Formerly ED 102.* *1 semester hour*

EDUC 115 Child Health, Safety, and Nutrition
Examines the health, safety, and nutritional needs of young children. Emphasizes common childhood illnesses and chronic conditions, health assessment tools and effective control measures; emergency care and first aid, safety management and practices; nutritional guidelines and activities. Offers opportunities for students to develop a curriculum that enhances children's education on health, safety, and nutrition. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly ED 125.* *3 semester hours*

EDUC 119 Introduction to Early Childhood Education
Covers curriculum modes, a teacher's roles, and family relationships. Topics include historical development, significant issues, current trends, ethics, and national standards in early childhood education. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly ED 119.*
3 semester hours

EDUC 135 Child Growth and Development
Provides students with the principles of child growth and development necessary to work in programs serving children from infancy through age eight. It emphasizes the physical, intellectual, emotional, and social development of children and their implications for developmentally appropriate teaching practices in educational settings. Attention is given to observation methods and their application in the completion of a case study of one child in a classroom environment. Students who pass the course with the final grade of "C" or better will receive 45 of the 90 classroom hours needed to become senior staff in programs licensed by the Office of Child Care Licensing and Regulations. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly ED 120.* *3 semester hours*

EDUC 136 Curriculum Planning in Early Childhood Education
Provides the student with an overview of the principles of developmentally appropriate curriculum planning for programs serving children from infancy and pre-K through age five. Specifically, this course emphasizes activity planning, teaching methods, material selection, assessment techniques, and classroom management appropriate for use in early childhood programs. Attention is also given to staff and parent communication and community resources. Students who pass the course with the final grade of "C" or better will receive 45 of the 90 classroom hours needed to become senior staff in programs licensed by the Office of Child Care Licensing and Regulation. Fifteen hours of documented field experience in a birth-through five or pre-K program are required. PREREQUISITE: *EDUC 135 or consent of department. Three hours lecture/discussion each week. Formerly ED 121.* *3 semester hours*

EDUC 153 Infant and Toddler Development and Curriculum Planning
Introduces the theory and practice of caring for infants and toddlers in a group setting. Topics include the significance of the early years; learning and development of infants and toddlers; socio-physical environment of group care setting; appropriate activities and interactions; and health, safety, and nutritional needs of infants and toddlers. Upon completion of this course, the student meets the coursework requirement for the position of infant/toddler senior staff in a child care center. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly ED 123.*
3 semester hours

EDUC 154 School-Age Child Care
Covers necessary elements for providing before-and-after-school programs serving children ages 5 to 13; quality, standards, and care issues; the growth and development of 5- through 13-year-olds; teachers' roles and qualifications; working with families and communities. Topics also include activity planning, environment designing, scheduling, building relationships with children, guiding children's behavior, and caring for children with special needs. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly ED 124.* *3 semester hours*

EDUC 170 First Start: Care of Infants and Toddlers with Disabilities
(R only)
Provides an overview of a variety of disabling conditions and chronic illnesses that can afflict infants and toddlers. Students will learn about the care needs of these children, legal issues, parental issues, and child and family advocacy. This course will include sessions with health and education professionals from the community who specialize in specific disabling conditions. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly ED 130. 3 semester hours*

EDUC 180 Children's Literature
A survey of a variety of significant and exemplary children's literature for preschool through elementary school, with the emphasis on the evaluation and presentation of children's literature. The course offers opportunities for the student to develop activity plans that enhance children's language development and early literacy. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly ED 200.* *3 semester hours*

EDUC 201 Introduction to Special Education
Covers psychological, sociological, and medical characteristics of the exceptional learner: mental retardation, learning disabilities, emotional or behavioral disorders, communication disorders, hearing impairments, visual impairment, physical disabilities, and giftedness. Topics also include classroom practices, current issues and trends, history and legal aspects, multicultural and bilingual implications. PREREQUISITE: *EDUC 101/102, EDUC 135, or PSYC 215. Three hours each week. Formerly ED 140.* *3 semester hours*

EDUC 202 Field Experience in Special Education
Provides a structured field-based experience for students to observe teachers and students in special education setting in local public schools. Applying concepts learned in EDUC 201, students reflect on teaching and learning with diverse student populations. Experiences in a small group and individual instruction provide a transition from theory to practice. Attendance at on-campus and school site orientations required before beginning observations. PRE- or COREQUISITE: *EDUC 201. Five hours lecture and thirty hours practicum each semester. Formerly ED 141.* *1 semester hour*

EDUC 208 Observation and Assessment of Young Children
Provides students with a broad set of observation and assessment tools and approaches. Covers guidelines and procedures of observation, documentation, and assessment. Emphasis is on analyzing and interpreting assessment results to enhance children's learning outcomes. Establishing partnerships with families and other professionals will be discussed. Students are required to do 15 hours of field experience. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly ED 126.* *3 semester hours*

EDUC 210 Curriculum Seminar—Science and Mathematics for Young Children
Science and mathematics concepts appropriate to the developmental levels of young children will be presented and analyzed. The student will develop curriculum activities and test these activities with young children to determine their usefulness in promoting logical thinking through interaction with concrete materials. PREREQUISITE: *EDUC 136. Two hours each week. Formerly ED 210.*
2 semester hours

EDUC 212 Curriculum Seminar: Creative Arts for Young Children
Enables the student to comprehend the process by which the child develops a sense of creativity through music, movement, puppetry, language arts, and manipulation of open-ended materials. The focus will be on teaching methods and hands-on activities. The student will develop a curriculum that promotes children's creative thinking and expression. PREREQUISITE: *EDUC 136. Two hours each week. Formerly ED 212.* *2 semester hours*

EDUC 224 Social-Emotional Development in Young Children
Enables the student to comprehend the process by which children develop social and emotional competence. The focus will be on the principles and techniques of a developmentally appropriate guidance approach, the role of adults and community in a child's social and emotional development, activity planning, and the ethical standards of the National Association for the Education of Young Children (NAEYC). PREREQUISITE: *EDUC 136. Three hours each week. Formerly ED 213.*
3 semester hours

EDUC 227 Administering Early Childhood Programs
Designed to provide students with management skills necessary to operate an early childhood center or school that serves children from infancy through age eight. Topics include program policies and procedures, government regulations, finance and budget, facility operation, personnel management, health and safety, accreditation systems, and program evaluation and improvement. PREREQUISITE: *EDUC 136 or its equivalent. Three hours each week. Formerly ED 215.* *3 semester hours*

EDUC 230 Early Childhood Leadership
Examines the leadership of early childhood programs that serve children from infancy through age eight. Topics include leadership theories, leadership traits and dispositions, leadership roles and styles, leadership skills and competencies, and connection between effective leadership and program quality in the context of early childhood education. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly ED 214.*
3 semester hours

EDUC 233 Practicum in Early Childhood Education
Experience in working with young children in a naturalistic setting; learning to identify children's learning interests and to adapt curriculum to children's needs; planning and implementing large and small group activities; practicing effective communication skills and class management skills; and evaluating a quality child care program. PREREQUISITE: *EDUC 136. Fifteen hours lecture and 90 hours practicum. Formerly ED 122.*
3 semester hours

EDUC 240 Integration Seminar in Early Childhood Leadership and Management
Provides students with opportunities to integrate and apply the concepts and skills acquired in EDUC 230 Early Childhood Leadership and EDUC 227 Administering Early Childhood Programs. Students will discuss the National Association for the Education of Young Children (NAEYC) Accreditation Criteria for Leadership and Management and use the criteria to evaluate early childhood programs. Other topics include ethical issues and NAEYC Code, technology, and professional development. Each student will also complete an experience-based project related to early childhood leadership and management. PREREQUISITES: *EDUC 227 and EDUC 230. Thirty (30) hours of lecture and forty-five (45) hours of field experience. Three hours each week. Formerly ED 220.*
3 semester hours

EDUC 243 Processes and Acquisition of Reading
Intended for the pre-service, undergraduate teacher candidate in early childhood, elementary, or special education. This course explores an instructional approach for teaching the literacy skills of speaking, reading, spelling, and writing. It also addresses fluency, comprehension, orthographic knowledge, and writing from an emergent to advanced level. Students examine how observation, documentation, interpretation, evaluation, and planning result in appropriate instruction based on children's strengths and needs. The course also focuses on the process of language development, including the impact of phonemic awareness and how the brain responds to reading acquisition. PREREQUISITE: *A grade of C or better in EDUC 201, or consent of department. Three hours each week. Formerly ED 216.*
3 semester hours

EDUC 244 Elementary Instruction of Reading
Designed to provide pre-service and in-service classroom teachers with the research-based best practices, techniques, and strategies in reading instruction. Learners will explore how observation, interpretation, and evaluation result in effective, efficient instructional planning for each of the stages of reading (literacy) development. Learners will focus on strategies for managing and allocating instructional time while developing the five components of reading (phonemic awareness, phonics, fluency, vocabulary, and comprehension) as they relate to the implementation of a comprehensive reading program. This course meets the Maryland State Department of Education Reading Instruction requirements for an initial certificate in Elementary Education. This course does not fulfill any requirements for the A.A.T. PREREQUISITE: *EDUC 243 or consent of department. Three hours lecture/discussion each week. Formerly ED 217.*
3 semester hours

EDUC 245 Materials for Reading Instruction

Designed to allow pre-service and in-service classroom teachers to understand and use the findings of scientific research to select, evaluate, and compare instructional materials and programs for the teaching of reading. Learners will explore how to effectively and efficiently use various sources and programs in instructional planning for each of the stages of reading (literacy) development. This course meets the Maryland State Department of Education Reading Instruction requirements for an initial certificate in Elementary Education. This course does not fulfill any requirements for the A.A.T. PREREQUISITE: *EDUC 243 or consent of department. Three hours lecture/discussion each week. Formerly ED 218. 3 semester hours*

EDUC 246 Assessment for Reading Instruction

Designed to support pre-service and in-service teachers in becoming proficient users of classroom-based assessments and assessment data. Instruction focuses on the purpose of assessment, types of assessment tools, and the administration and use of valid, reliable formal and informal assessments of reading. Participants will show that they can use assessment data to guide instructional decisions. This course meets the Maryland State Department of Education Reading Instruction requirements for an initial certificate in Elementary Education. This course does not fulfill any requirements for the A.A.T. PREREQUISITE: *EDUC 243 or consent of department. Three hours lecture/discussion each week. Formerly ED 219.*

3 semester hours

EDUC 256 Principles of Educational Assessment

This course is an introduction to tests and measurement in an educational setting. Students develop, use, and interpret classroom assessments, including tests, performance assessments, rating scales, portfolios, and observations. Basic standard setting, grading, testing ethics, locating and evaluating measurements, program evaluation, and classroom research are also presented. This course meets the Maryland State Department of Education (MSDE) Assessment for Students requirement for an initial certificate in Early Childhood Education, Elementary Education, and Secondary Education. This course also meets the MSDE Assessment, Diagnosis, and Prescriptive Techniques required for the initial certificate in Generic Special Education (Infant/ Primary), Generic Special Education (Elementary/ Middle), and Generic Special Education (Secondary/ Adult). *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly ED 206.*

3 semester hours

EDUC 260 Methods of Teaching for Elementary Education

Provides an overview of teaching methodology for effective instruction in elementary classrooms. Opportunities will be provided for planning and practicing instruction based on a knowledge of the theory and research supporting the strategies and models used. Emphasis will be on developing the habit of reflective practice and fostering collaborative problem solving. This course meets the Maryland State Department of Education Teaching Methodology requirement for an initial certificate in Elementary Education. This course does not fulfill any requirements for the A.A.T. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly ED 205.* *3 semester hours*

EDUC 265 Methods of Teaching Secondary Students
This course provides an overview of teaching methodology for effective instruction for prospective and noncertified secondary teachers. Students plan, design, and conduct instruction. Topics include theory and practices, research-based instructional models, multiculturalism, classroom management, and inclusion of students with special needs. This course meets the Maryland State Department of Education Teaching Methodology requirement for an initial certificate in Secondary Education. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly ED 207.*
3 semester hours

EMGT—Emergency Preparedness Management

EMGT 101 Principles of Emergency Management (TP/SS only)
Provides an overview of the characteristics, functions, and resources of an integrated system, as well as information on how various emergency management services (fire personnel, police, security, health care providers, etc.) work together in a system of resources and capabilities. Emphasis will be placed on how this system is applied to all hazards for all government levels, across the four phases and all functions of emergency management. It includes the role of national, regional, and local services in a variety of disasters. This course is intended for a broad audience including personnel in public service, emergency fields, health care facilities, first responders, and others having an interest in gaining a working knowledge of emergency preparedness. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly EP 101.* *3 semester hours*

EMGT 103 Emergency Response and Recovery (TP/SS only)
Examines the necessary components required for incident response and recovery. Provides an overview of the various types of disasters that may occur, the myriad of actors that are involved in emergency management, and the diverse theoretical frameworks from which post-disaster activities may be approached. Topics will include rapid situation assessment, special population needs, sources of outside help, and continuity of local government operations. The course will emphasize the role of human services organizations in providing assistance to people and communities affected by disasters in the immediate aftermath and for long-term recovery, as well as the roles and responsibilities of local, state, and federal officials and public service, private sector, and voluntary organizations. PREREQUISITE: *EMGT 101 or consent of department. Three hours each week. Formerly EP 103.*
3 semester hours

EMGT 104 Incident Management System and EOC Interface (TP/SS only)
Overview of incident command, its role in emergency management, and how incident command and the emergency operations center interface to manage an emergency situation. Includes organization and staffing, organizing for incidents and events, incident resource management, air operations, and incident planning. PREREQUISITE: *EMGT 101 or consent of department. Three hours each week. Formerly EP 104.* *3 semester hours*

EMGT 105 Hazard Mitigation and Preparedness (TP/SS only)
Introduces the major principles involved in preparing for and mitigating the impacts of hazards in the context of emergency management. Examines the role of the federal, state, and local governments in developing and carrying out hazard mitigation and preparedness policies, as well as the role that the private sector can play in protecting economic vitality. Characteristics of various hazards, both natural and man-made that can affect our communities are investigated. PREREQUISITE: *EMGT 101 or consent of department. Three hours each week. Formerly EP 105.* *3 semester hours*

EMGT 106 Technology in Emergency Management (TP/SS only)
Provides an introduction and overview of the application of technology in emergency management. Students learn how to utilize technology in the support of emergency preparedness, response, recovery, and mitigation efforts and the key elements that must be in place for technology to enhance the emergency management process. Examples of current and emerging technology applications are illustrated along with an explanation of critical issues that are a part of the technology application. Special issues and problems associated with the use of technology in emergency management are examined and strategies to overcome these issues and problems are outlined. PREREQUISITE: *EMGT 101. Three hours each week. Formerly EP 107.* *3 semester hours*

EMGT 200 Emergency Planning (TP/SS only)
Introduces students to the process and practice of emergency planning. Examines the concepts of writing an emergency operating plan and the elements necessary for inclusion in the plan (all-risk hazard planning). This course is designed for persons who are involved in developing an effective emergency planning system and offers training in the fundamentals of the emergency planning process, including the rationale behind planning. The focus is on an effective all-hazard emergency planning operations planning process to save lives and protect property threatened by disaster. PREREQUISITE: *EMGT 101. Three hours each week. Formerly EP 102.* *3 semester hours*

EMGT 201 Critical Incident and Disaster Stress Management for Emergency Responders (TP/SS only)
Course provides an overview of stress reactions as applied to victims and rescuers and prepares the student to focus in the direct response, operations, and management of critical incidents. This course also provides a specific focus on stress and reactions, post traumatic stress disorder, and Critical Incident Stress Debriefing (CISD) as applied to specific organizations and individuals. Community challenges and dilemmas faced by emergency management agencies and government officials, as well as the physical and mental health of responding professionals, are explored. PREREQUISITE: *EMGT 101 or consent of department. Three hours each week. Formerly EP 201.*
3 semester hours

EMGT 202 Terrorism and Emergency Management (TP/SS only)
Explores the role of emergency management in response to the growing threat of domestic and international terrorism. Introduces terrorism, ranging from low-level acts of threats and acts of violence that may represent significant risk to human life and property to large-scale acts of violence using "weapons of mass destruction" that may have devastating, long-term effects. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly EP 202.* *3 semester hours*

EMGT 203 Resource Management – Managing Volunteers and Donations (TP/SS only)
Course introduces the concepts of managing volunteers and donations in all phases of emergency management. Topics such as identifying volunteer resources and recruiting, training, supervising, and motivating volunteers are discussed. The course also addresses coordinating with voluntary agencies, community-based organizations, professional groups, as well as business and industry. PREREQUISITE: *EMGT 101 or consent of department. Three hours each week. Formerly EP 203.*
3 semester hours

EMGT 204 Emergency Management Public Education Programs (TP/SS only)
Course provides a study of the design, development, and delivery of public disaster safety education. Addresses methods of identification of disaster safety programs, the selection of target populations, methods of designing and implementing information and education programs, and methods of evaluating a program's impact. Includes theoretical and practical skills training in individual, group, and mass media communications; instructional skills; planning priorities; and evaluation techniques. PREREQUISITE: *EMGT 101 or consent of department. Three hours each week. Formerly EP 204.* *3 semester hours*

EMGT 205 Public Health in Emergency Management (TP/SS only)
Explores the pervasive relationship of public health in emergency management. The course covers the role of state and federal agencies, the role of public health in local planning, and the response needed for natural, accidental, and intentional emergency events. Examines emergency surveillance and information systems; training and evaluation; the changing and unique role of the public health field in emergency management through integration with traditional emergency pre-education of professional and public communities. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly EP 106.*
3 semester hours

EMGT 220 Introduction to Homeland Security (TP/SS only)
Provides an interdisciplinary perspective about terrorism, terrorist behavior, homeland security policies, and challenges from an all-hazards perspective. Threats to homeland security, including natural and technological disasters, as well as intentional threats of domestic and international terrorism, including weapons of mass destruction, are examined. Students gain a comprehensive understanding of terrorism and disasters, the threats posed by each, and the responses to those threats, as well as those that will be faced in the future. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly EP 110.*
3 semester hours

EMGT 240 Leadership in Emergency Management (TP/SS only)
Capstone course that provides an introduction to leadership and organizational theory in the context of emergency management. Students examine and develop a range of skills in a number of interpersonal areas—conflict management, use of power, group dynamics, and leadership and influence. PREREQUISITES: *EMGT 101 and consent of department. Three hours each week. Formerly EP 250.*
3 semester hours

ENEE—Electrical Engineering

ENEE 140 Introduction to Programming Concepts for Engineers
Principles of software development, high-level languages, input/output, data types and variables, operators and expressions, program selection, repetition, functions, arrays, strings, introduction to algorithms, software projects, debugging, and documentation. Programs will use the C language. PREREQUISITE: *MATH 165. Assessment levels: ENGL 101/101A, READ 120. Two hours lecture, one hour laboratory each week. Formerly EE 140.*
2 semester hours

ENEE 150 Intermediate Programming Concepts for Engineers
Intermediate principles of software development: high-level languages, object-oriented design, documentation, data structures, graphs, dynamic memory allocation, software development for applications in electrical and computer engineering, and software development in teams. Programs will use the C and Java languages. PREREQUISITES: *A grade of C or better in ENEE 140 or consent of instructor and MATH 181. Three hours lecture, one hour laboratory each week. Formerly EE 150.* *3 semester hours*

ENEE 207 Electric Circuits
Design, analysis, simulation, construction and evaluation of electric circuits. Covers basic concepts of electrical engineering such as terminal relationships; applications of Kirchhoff's laws to simple resistive circuits; solution of resistor networks using mesh and node analysis and Thevenin and Norton's theorems; transient analysis of first and second-order circuits; DC and AC steady state analysis; frequency response and transfer functions; ideal op-amp circuits and diode and transistor circuits. PREREQUISITE: *PHYS 262.* PRE- or COREQUISITE: *MATH 282. Three hours lecture, two hour laboratory each week. Formerly EE 207.*
4 semester hours

ENEE 222 Elements of Discrete Signal Analysis
Introduction to discrete-time and continuous-time signals. Topics covered include sampling, linear transformations, discrete Fourier Transform and its properties/applications, Fourier Series, and discrete-time linear filters and their applications. Example problems in the context of electrical engineering applications are solved using a variety of software tools, including structured programming and high-level computational packages such as Matlab. PREREQUISITE: *ENEE 140.* COREQUISITE: *MATH 182 or higher. Three hours lecture, two hours laboratory each week. Formerly EE 222.*
4 semester hours

ENEE 244 Digital Logic Design (G and R only)
This course is designed to introduce sophomores in electrical engineering to basic principles and design procedures of digital systems at the gate and chip levels. PREREQUISITE: *ENES 100 or consent of department. Three hours each week. Formerly EE 244.*
3 semester hours

ENEE 245 Digital Circuits and Systems Laboratory
Introduction to basic measurement techniques and electrical laboratory equipment such as design, construction, and characterization of digital circuits containing logic gates, sequential elements, oscillators, and digital integrated circuits; introduction to digital design and simulation with the Verilog Hardware Description Language (HDL). PREREQUISITES: *ENEE 244, PHYS 262, and a grade of C or better in CMSC 204 or ENEE 150. One hour lecture, three hour laboratory each week. Formerly EE 245.* *2 semester hours*

ENES—Engineering Science

ENES 100 Introduction to Engineering Design *(NSND)*
Overview and application of the basic tools and techniques of engineering design and graphic communications, including CAD, engineering reports, cost analysis, and use of software tools. Group projects are assigned. PREREQUISITE: *MATH 093/096. Assessment levels: ENGL 101/ 101A, READ 120. Two hours lecture, two hours laboratory each week. Formerly ES 100.* *3 semester hours*

ENES 102 Statics
Statics of particles, rigid bodies, equivalent systems of forces, and equilibrium of rigid bodies. Distributed forces, centroids, and center of gravity. Analysis of structures, forces in cables, friction, moments of inertia. PREREQUISITE: *MATH 181. Three hours each week. Formerly ES 102.*
3 semester hours

ENES 104 Introduction to Engineering Professions
An introduction to the profession of engineering; guidance in the study of engineering and the fields of engineering, ethical responsibilities of engineers, and engineering hands-on activities. The course will provide information useful for making decisions in engineering fields of study and careers. Ethical and legal aspects of the engineering profession will be discussed. Workshops for resume writing, participation in the engineering club, and field trips may be required. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. One and one-half hours lecture/seminar each week. Formerly ES 104.* *1 semester hour*

ENES 120 Biology for Engineers
Introduction to the functions and interactions of biological systems from a quantitative perspective. Topics including concepts in molecular and cellular biology, mechanisms of concepts in molecular and cellular biology, mechanisms of thermodynamics, genetics, gene expression and regulation. Introduction to the modern biological experimental techniques, methods of data analysis and biostatistics. An overview of role of bioengineers. PREREQUISITES: *CHEM 132 or CHEM 135, and MATH 181. Three hours each week. Formerly ES 120.*
3 semester hours

ENES 220 Mechanics of Materials
Distortion of engineering materials in relation to changes in stress or temperature. Geometry of internal strain and external displacement. Elementary applications of beams, columns, shafts, tanks, trusses, and connections. PREREQUISITE: *ENES 102.* PRE- or COREQUISITE: *MATH 182. Three hours each week. Formerly ES 220.*
3 semester hours

ENES 221 Dynamics
Kinematics of particles, force, mass, and acceleration. Kinetics of particles, work and energy, impulse, and momentum. Kinematics of rigid bodies, plane motion of rigid bodies, forces and accelerations, energy, and momentum methods. Kinetics of rigid bodies in three dimensions. PREREQUISITES: *ENES 102, MATH 182, and PHYS 161. Three hours each week. Formerly ES 221.*
3 semester hours

ENES 232 Thermodynamics
A study of the properties, characteristics, and fundamental equations of substances in the solid, liquid, and vapor states, as well as the basic laws of work and heat transfer. Application of the first and second laws of thermodynamics to the analysis of heat engines, refrigeration systems, gas mixtures, and reactions. PREREQUISITE: *PHYS 161. Three hours each week. Formerly ES 232.*
3 semester hours

ENES 240 Scientific and Engineering Computation
Elementary numerical analysis. Roots of equations. Systems of linear equations: Gaussian elimination, matrix diagonalization and inversion, iterative methods. Interpolation and curve fitting. Numerical integration. Differential equations. Example problems in the context of engineering applications are solved using a variety of software tools, including structured programming and high-level computational packages such as Matlab. PREREQUISITE: *Completion of one semester of calculus.* COREQUISITE: *MATH 182 or higher. Two hours lecture, two hours laboratory each week. Formerly ES 240.* *3 semester hours*

ENGL—English

ENGL 001 Basic English I
A developmental course designed to improve writing skills, starting at the sentence and paragraph level. This course emphasizes writing correct sentences with a variety of structures and combining techniques, well-developed paragraphs, and multi-paragraph essays. Students will also study grammar, usage, mechanics, and punctuation. Students are required to submit a final portfolio that meets department requirements. EN 001 is intended for native speakers of English who need further preparation prior to taking credit courses in English. PREREQUISITE: *An Accuplacer English score of 0-79.9.* PRE- or COREQUISITE: *READ 095 (which requires an Accuplacer reading score of 53-65) except for those students exempt from this requirement by initial placement testing. New and continuing students with reading scores below the READ 095 level are not eligible for ENGL 001. Lecture hours will be used for calculating student load and tuition (five hours each week, plus required laboratory work). Formerly EN 001.*
No credit/No quality points

ENGL 002 Basic English II
A developmental course designed to improve writing skills, starting at the essay level. This course emphasizes writing multi-paragraph essays. Students will also study grammar, usage, mechanics, and punctuation. Students are required to submit a final portfolio that meets department requirements. EN 002 is intended for native speakers of English who need further preparation prior to taking credit courses in English. PREREQUISITE: *Completion of ENGL 001 with a grade of C or an Accuplacer English score of 80-89.9.* PRE- or COREQUISITE: *READ 095 (which requires an Accuplacer reading score of 53-65), except for those students exempted from this requirement by initial placement testing. New and continuing students with reading scores below the READ 095 level are not eligible for ENGL 002. Lecture hours will be used for calculating student load and tuition (five hours each week, plus required laboratory work). Formerly EN 002.* *No credit/No quality points*

ENGL 101 Introduction to College Writing CE
An introduction to college writing. The first of two sequential freshman composition courses, this course emphasizes the process of critical thinking, reading, and writing. Student writing progresses from a personal to an academic perspective. Students write for different audiences and purposes using a variety of rhetorical strategies. Students write in response to reading and are introduced to standard documentation procedures. Students are required to submit a final portfolio that meets department requirements. PREREQUISITE: *Placement through assessment testing, successful completion of Basic English (ENGL 001 or ENGL 002 with a grade of A), or completion of AELW 940 with a grade of C or better. Assessment level: READ 120. Three hours each week. Formerly EN 101.*
3 semester hours

ENGL: 101A teaches students the same skills as ENGL 101 but provides additional time for grammar and mechanics review. PREREQUISITE: *Placement through assessment testing, successful completion of Basic English (ENGL 001 or ENGL 002 with a grade of B or better), or completion of AELW 940 with a grade of C or better. Assessment level: READ 120. For computation of tuition, this course is equivalent to five semester hours. Five hours each week. Formerly EN 101A.* *3 semester hours*

ENGL 102 Critical Reading, Writing, and Research *(ENGF)*
Studies in argumentation and research. A second of two sequential freshman composition courses, this course is designed to help students learn to identify, critically read, analyze and evaluate, and write arguments using logic and appropriate rhetorical techniques. Students construct thesis-driven academic essays, synthesizing and incorporating the words and ideas of others and using formal documentation. Students learn to identify audience as well as employ effective tone, word choice, and sentence patterns. PREREQUISITE: *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours each week. Formerly EN 102.* *3 semester hours*

ENGL 103 Critical Reading, Writing and Research in the Work Place *(ENGF)*
Studies in argumentation and research in the workplace. A second of two sequential freshman composition courses, this course is designed to help students understand the processes and products associated with writing used in technology and business. Emphasis will be on the writing process, including writing to different audiences and supporting claims persuasively with appropriate evidence and detail. Students will write a variety of reports, documentation, and proposals, employing a range of stylistic options. The course will include an introduction to the rules for integrating visual aids into technical documents and a major research project focusing on developing an appropriate research question, conducting scholarly research, and incorporating information into writing with the proper conventions of citation. PREREQUISITE: *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours each week. Formerly EN 109.* *3 semester hours*

ENGL 110 Principles of English Grammar
A study of the various aspects of English grammar, such as sentence structure, agreement, tenses, pronoun reference, and punctuation, to increase students' knowledge of the English language and to enhance their writing capabilities. *Three hours each week. Formerly EN 105.* *3 semester hours*

ENGL 115 College Vocabulary Development
Intended to expand vocabulary development to improve writing and reading efficiency for effective communication skills. Emphasis placed on affixes, roots, contextual clues, lexical training, and phonic and structural analyses of words. *Thirty hours lecture over an eight-week period. Formerly EN 107.*
2 semester hours

ENGL 122 Introduction to World Mythology *(HUMD[M])*
An introduction to world mythology across a range of periods and cultures. This is an interdisciplinary reading course of special relevance to students of psychology, anthropology, art, history, literature, and religion. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. *Assessment level: READ 120. Three hours lecture/discussion each week. Formerly EN 122.* *3 semester hours*

ENGL 190 Introduction to Literature *(HUMD)*
An introduction to the study of literary forms, including fiction, essays, poetry, and drama with an emphasis on understanding literature as an integral part of intellectual development. Students learn to apply critical thinking skills as they read, analyze, interpret, and respond to texts in class discussions, projects, examinations, and essays. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly EN 190.*
3 semester hours

ENGL 200 Special Topics in Literature
An exploration of the literature of a particular region, author, period, or genre. The course provides an evaluation of representative texts, an assessment of literary techniques and strategies, and a consideration of the historical, political, and cultural impact of the chosen literary topic. For regional literatures, foreign or domestic travel may be an optional component of the course. Letter designators in the schedule of classes will indicate the specific topic to be covered in a given semester. PREREQUISITE: *A grade of C or better in ENGL 101/101A, or consent of department. Three hours lecture/discussion each week. Formerly EN 200.*
3 semester hours

ENGL 201 Introduction to World Literature I *(HUMD[M])*
An introduction to world literature from antiquity through the mid-17th century, including oral traditions, poetry, fiction, the essay, and drama. Emphasis is placed on key ideas that express the commonality of the human spirit and experience across cultures. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. PREREQUISITE**:** *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 201.* *3 semester hours*

ENGL 202 Introduction to World Literature II *(HUMD[M])*
An introduction to world literature from the mid-17th century to the present, including oral traditions, poetry, fiction, the essay, and drama. Emphasis is placed on key ideas that express the commonality of the human spirit and experience across cultures. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. Students may enroll in ENGL 202 without having taken ENGL 201. PREREQUISITE**:** *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 202.*
3 semester hours

ENGL 205 Masterpieces of Asian Literature *(HUMD[M])*
Epics, drama, poetry, stories, novels, and essays of Near East, Southeast, and Far East Asia. Students read basic texts for class discussion and prepare papers in areas with special appeal to themselves. PREREQUISITE: *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 215.*
3 semester hours

ENGL 208 Women in Literature *(HUMD[M])*
An introduction to literature by and about women from a multicultural perspective, focusing on women's diverse experiences and backgrounds. Representative texts are studied in their historical and socio-political contexts. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. PREREQUISITE: *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 208.* *3 semester hours*

ENGL 211 Survey of American Literature I *(HUMD)*
A survey of American literature from its beginnings through the mid-19th century, focusing on representative works in poetry, fiction, the essay, drama and/or oral traditions studied in the context of the multicultural American experience. The course introduces recurrent themes in the scope of American literature and culture. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. PREREQUISITE: *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 211.*
3 semester hours

ENGL 212 Survey of American Literature II *(HUMD)*
A survey of American literature from the mid-19th century to the present, focusing on representative works in poetry, fiction, the essay, drama, and/or oral traditions studied in the context of the multicultural American experience. The course introduces recurrent themes in the scope of American literature and culture. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. Students may enroll in ENGL 212 without having taken ENGL 211. PREREQUISITE**:** *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 212.*
3 semester hours

ENGL 213 Survey of British Literature I *(HUMD)*
A survey of British literature, including prose, poetry, and drama, from its beginnings circa the 9th century through the mid-18th century. Representative works of major authors are studied in their literary, historical, and sociopolitical contexts. The course introduces recurrent themes in the scope of British literature and culture. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. PREREQUISITE**:** *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 213.*
3 semester hours

ENGL 214 Survey of British Literature II *(HUMD)*
A survey of British literature, including prose, poetry, and drama, from the mid-18th century to the present. Representative works of major authors are studied in their literary, historical, and sociopolitical contexts. The course introduces recurrent themes in the scope of British literature and culture. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. Students may enroll in ENGL 214 without having taken ENGL 213. PREREQUISITE**:** *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 214.* *3 semester hours*

ENGL 220 The American Novel *(HUMD)*
An examination of the American novel from its origins to the present. Texts representative of the multicultural American experience are studied in their historical, cultural, critical, and aesthetic contexts. Students read, analyze, and respond critically to novels in class discussions, examinations, and essays. PREREQUISITE**:** *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 216.*
3 semester hours

ENGL 223 Introduction to Asian American Literature *(HUMD[M])*
This survey course examines the evolution of a body of literature known as Asian American literature, from its beginnings at the turn of the 20th century to the present. The course will examine the literary works of Asian American writers, mainly in fiction and poetry, in its literary, historical, cultural, social, and political contexts. PREREQUISITE: *ENGL 101/101A or consent of department. Three hours each week. Formerly EN 204.*
3 semester hours

ENGL 226 Survey of African American Literature I *(HUMD)*
A survey of African American literature from its earliest beginnings to the Harlem Renaissance, including vernacular tradition, spirituals, folk tales, slave and emancipation narratives, poetry, speeches, fiction, non-fiction and drama. This course emphasizes the trends, patterns and historical incidents that have influenced recurrent themes in African American literature. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. PREREQUISITE: *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 226.*
3 semester hours

ENGL 227 Survey of African American Literature II *(HUMD)*
A survey of African American literature from the Harlem Renaissance to the present, including poetry, speeches, blues, jazz, hip-hop, fiction, non-fiction, and drama. This course emphasizes the trends, patterns, and historical incidents that have influenced recurrent themes in African American literature. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. Students may enroll in ENGL 227 without having taken ENGL 226. PREREQUISITE: *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 227.*
3 semester hours

ENGL 230 Introduction to Modern Drama *(HUMD)*
An introduction to modern drama from the late 19th century to the present, including representative works in realism, naturalism, expressionism, the absurd, and post-modern and post-colonial forms. Students read, analyze, and respond critically to plays in class discussions, examinations, and essays. PREREQUISITE: *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 230.*
3 semester hours

ENGL 231 Introduction to Modern Poetry *(HUMD)*
A survey of poetry from the late 19th century through the mid-20th century that characterizes the Modernist style. Representative texts are studied in their literary, historical, and socio-political contexts. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. PREREQUISITE**:** *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 231.*
3 semester hours

ENGL 233 The Short Story *(HUMD)*
A study of the short story in world literature with emphasis on the literary form. Students will examine the basic elements of fiction as they appear in short stories. Concentration will be on the literary analysis of short stories from a variety of critical perspectives. PREREQUISITE: *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 221.*
3 semester hours

ENGL 235 Film and Literature *(ARTD)*
A comparative study of films and the literary sources upon which they are based. Special attention is given to the practical and theoretical problems of adapting literature to film and the basic differences between the two. The course explores how character development, plot, narrative, symbols, and language are translated from literary texts to film, and considers the limitations of film adaptation. Students read, analyze, and respond critically to literature and films in class discussions, examinations, and essays. PREREQUISITE: *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week, plus film viewings. Formerly EN 220.*
3 semester hours

ENGL 241 American Literature of Nature and the Environment *(HUMD)*
A survey of American nature and environmental literature, including journals, essays, narratives, and poems, with an emphasis on the interrelationship between nature and culture, the impact of the landscape on personal and social identity, and the symbolic value of the wilderness. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. PREREQUISITE: *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 210.*
3 semester hours

ENGL 245 The Bible as Literature *(HUMD)*
A survey of major books of the Hebrew and Christian Scriptures considered from literary and historical points of view. Major attention is devoted to themes, symbols, and archetypes that have influenced subsequent literature. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. PREREQUISITE: *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 209.*
3 semester hours

ENGL 248 Literature of the Holocaust *(HUMD[M])*
Examines the experience of the Holocaust through poetry, drama, the novel, and the diary. Emphasis on the literary responses of individual survivors and of witnesses, and the literature of atrocity the Holocaust evoked. Historical background helpful, but not required. PREREQUISITE: *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 217.* *3 semester hours*

ENGL 251 Introduction to Journalism
An introduction to the fundamentals of journalism and mass communication including advertising and public relations. The course will look at the changing industry and career trends. The course explores media literacy and communications theories through print and electronic media. Writing focuses on generally accepted news writing principles. PREREQUISITE: *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week. Formerly EN 111.*
3 semester hours

ENGL 252 News Writing
Develops writing skills for news and news-feature stories. Students will work on all elements of writing news and feature stories for print and online delivery. Students will learn writing, reporting, interviewing and copyediting techniques for accuracy and readability in stories. Students will also study non-text elements, such as photos, videos, and other graphics related to news and news-feature stories both print and online. PREREQUISITE: *ENGL 251, TVRA 134 or consent of department. Three hours each week. Formerly EN 245.* *3 semester hours*

ENGL 258 Techniques of Proofreading and Editing
For students in or preparing for careers that require them to proofread or edit material written by others. Emphasis is placed on the fundamental concepts of proofreading and editing, including copy marking, levels of editing, and procedures. PREREQUISITES: *A grade of C or better in ENGL 101 and ENGL 110, or consent of department. Three hours each week. Formerly EN 125.* *3 semester hours*

ENGL 259 Organization and Development of Technical Documents
For students in or preparing for careers that require preparation, editing, or production of technical documents of significant length. Students examine the roles and functions of managers, reviewers, editors, and writers throughout the document development cycle and study tools and techniques appropriate to each role. By studying relationships among functions, tools, and techniques, students will be able to assess and recommend procedures and policies for developing documents in the workplace. PREREQUISITE: *A grade of C or better in ENGL 103 or consent of department. Three hours each week. Formerly EN 240.* *3 semester hours*

ENGL 264 Introduction to Creative Writing of Fiction *(ARTD)*
A foundation course in the forms and techniques of short story writing. Special attention is given to point of view, plot, characterization, setting, and atmosphere in standard and experimental modes in the pursuit of establishing each student's style and expression. Extensive class discussion of fiction of proven merit and student writing. Designed for students who have fully mastered basic writing skills and who are literate writers but who have written little or no fiction previously. One college-level literature course or extensive previous outside reading of fiction is desirable. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly EN 218.*
3 semester hours

ENGL 265 Advanced Creative Writing of Fiction
An advanced workshop designed to raise a student's work to a professional level for eventual publication. Manuscripts are analyzed in class discussion with emphasis on the finer elements of narrative, characterization, dialogue, and pacing. Techniques of novella and novel writing are presented. The work of established mainstream and genre writers is also scrutinized to heighten awareness of various literary approaches. PREREQUISITE: *ENGL 264 or the equivalent or consent of instructor based upon a writing sample. May not be taken concurrently with other fiction writing courses. May be repeated for credit. Three hours each week. Formerly EN 219.* *3 semester hours*

ENGL 272 Introduction to Creative Writing of Poetry *(ARTD)*
Designed to provide students a foundation for understanding the forms, techniques, and aesthetics of poetry writing in order that they may develop their skills. Emphasis will be on both traditional and contemporary modes to establish each student's style of expression and understanding of the craft. Students' poems, the poems of their peers, and poetry of proven merit will be discussed in a workshop setting. PREREQUISITE: *A grade of C or better in ENGL 101 or ENGL 101A or consent of instructor based on a writing sample. Three hours each week. Formerly EN 223.* *3 semester hours*

ENGL 273 Advanced Creative Writing of Poetry
Develops further the writing skills of those students who have demonstrated the ability to write poetry of merit. Students study in depth two modern poets in order to recognize style and thematic patterns. Students' poems will be critiqued in a workshop setting. PREREQUISITE: *ENGL 272 or consent of instructor based on a portfolio of student work. Three hours each week. Formerly EN 224.*
3 semester hours

FILM—Film

FILM 110 Introduction to Film *(ARTD)* (TP/SS only)
This course presents a basic introduction to the study of narrative film. Analysis of film structure and content will be developed through the use of genre analysis system. Basic film technique and language as it affects structure and content will also be examined. Students will view and discuss examples of both historic and contemporary film at the American Film Institute Theatre and in class, and will read and write about film structure and technique. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly FL 110.*
3 semester hours

FILM 120 History of International Film to 1950 (TP/SS only)
This is a survey course that traces the development of film from the silent era to 1950. The writing, directing, editing, acting, and technical development of film will be studied. Examples of great films from all eras will be screened at the American Film Institute Theatre and in class. *Assessment levels: ENGL 101/101A, READ 120. Two hours lecture, two hours laboratory each week. Formerly FL 120.* *3 semester hours*

FILM 210 Screenwriting (TP/SS only)
This course will teach the techniques of narrative storytelling through the camera arts. The student will study writing dialogue and action for film and television through several small projects culminating in a final 10-minute script. Films will be screened at the American Film Institute Theatre and in class as examples of effective screenwriting. PREREQUISITE: *FILM 110 or consent of instructor. Two hours lecture, two hours laboratory each week. Formerly FL 210.* *3 semester hours*

FILM 220 Basic Movie Production (TP/SS only)
This is a project course in which the student will learn the basics of filmmaking, including script preparation, shooting, and editing. The student will produce two short projects shot and edited on video: a silent short and a dialogue, sound, and music short. PREREQUISITES: *FILM 110 and FILM 210, or consent of instructor. Two hours lecture, two hours laboratory each week. Formerly FL 220.*
3 semester hours

FILM 230 Movie Making Independent Study: Editing (TP/SS only)
This independent study course for the advanced film student requires mastery of professional-level digital editing software. Students write, direct, and edit a short video, at least five minutes long, with a public screening upon completion of the project. PREREQUISITES: *A grade of A or B in FILM 110, FILM 210, FILM 220; and consent of film curriculum coordinator. Hours to be assigned and arranged by coordinator. It is expected that students will spend approximately 150 hours to complete the work for the course. Formerly FL 230.* *3 semester hours*

FILM 240 Movie Making Independent Study: Production (TP/SS only)
This independent study course for the advanced film student focuses on producing a longer film, at least 20 minutes long, with a public screening upon completion of the project. PREREQUISITES: *A grade of A or B in FILM 110, FILM 210, FILM 220, and FILM 230; and consent of film curriculum coordinator. Hours to be assigned and arranged by coordinator. It is expected that students will spend approximately 150 hours to complete the work for the course. Course may be taken up to three times. Formerly FL 240.* *3 semester hours*

FIRE—Fire Science

FIRE 101 Principles of Emergency Services (R only) **CE-R**
Provides an overview to fire protection and emergency services; career opportunities in fire protection and related fields; philosophy and history of fire protection and emergency services; fire loss analysis; organization and function of public and private fire protection and emergency services; fire/rescue departments as part of local government; laws and regulations affecting the fire service; fire and emergency service nomenclature; specific fire protection functions; basic fire chemistry and physics; introduction to fire protection systems; introduction to fire strategy and tactics. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly FS 101.* *3 semester hours*

FIRE 102 Fire Behavior and Combustion (R only) **CE-R**
Explores the theories and fundamentals of how and why fires start and spread, and how they are controlled. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly FS 105.* *3 semester hours*

FIRE 103 Building Construction for Fire Protection (R only)
Provides the components of building construction related to firefighter and life safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly FS 112.* *3 semester hours*

FIRE 104 Principles of Fire and Emergency Services Safety & Survival (R only)
Introduces the basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency services. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly FS 102.* *3 semester hours*

FIRE 105 Fire Prevention (R only)
Provides fundamental knowledge relating to the field of fire prevention. Topics include: history and philosophy of fire prevention; organization and operation of a fire prevention bureau; use and application of codes and standards; plans review; fire inspections; fire and life safety education; and fire investigation. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly FS 107.* *3 semester hours*

FIRE 120 Design Concepts for Fire Protection (R and TP/SS only)
Introduces the student to basic design software and technologies for developing fire protection systems. Students will set up, create, and edit 2D drawings and plans of fire protection systems. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly FS 120.* *3 semester hours*

FIRE 150 Emergency Medical Technician Basic (TP/SS only)
Covers the minimum level of certification for ambulance personnel. Students learn to properly perform the various skills utilized by emergency medical technician level pre-hospital care providers in the care of sick or injured persons. Because of national and state requirements, attendance at all classes is mandatory. This course prepares the student for the Maryland and National Registry EMT certification written and practical examinations and follows the guidelines established for EMT training by the DOT/NHTSA national standard curriculum. Participation in the clinical component of this course requires proof of a negative TB test and a criminal background investigation. All students must maintain a 70 percent average and can score no lower than 60 percent on any of the assessments. Failure to maintain a 70 percent average will result in the student being dropped from the course. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Four hours lecture, nine hours laboratory each week. Formerly FS 150.*
7 semester hours

FIRE 201 Fire Protection Systems (R only)
Provides information relating to the features of design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection, and portable fire extinguishers. *Assessment levels: ENGL 101/ 101A, READ 120 or consent of department. Three hours each week. Formerly FS 216.* *3 semester hours*

FIRE 202 Fire Protection Hydraulics and Water Supply (R only)
Provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and solve water supply problems. *Assessment levels: ENGL 101/101A, READ 120 or consent of department. Three hours each week. Formerly FS 212.* *3 semester hours*

FIRE 203 Fire and Emergency Service Administration (R only) (CE:R)
Introduces the student to the organization and management of a fire and emergency services department and the relationship of government agencies to the fire service. Emphasis is placed on fire and emergency service, ethics, and leadership from the perspective of the company officer. PREREQUSITIE: *FIRE 202 or consent of department. Three hours each week. Formerly FS 204.*
3 semester hours

FIRE 220 Strategy and Tactics (R only)
Provides the principles of fire ground control utilization of personnel, equipment, and extinguishing agents. PREREQUISITE: *FIRE 101 or consent of department. Three hours each week. Formerly FS 214.*
3 semester hours

FIRE 221 Principles of Code Enforcement (R and TP/SS only)
Provides students with the fundamental knowledge of the role of code enforcement in a comprehensive fire prevention program. PREREQUISITES: *FIRE 101, FIRE 103, FIRE 105, and FIRE 201 or consent of department. Three hours each week. Formerly FS 221.*
3 semester hours

FIRE 222 Fire Plans Review (R and TP/SS only)
Provides for the application of fire codes and standards in developing an understanding of a building's fire protection features including the design of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection, and egress arrangements through the evaluation of 2D drawings and schematics. PREREQUISITES: *FIRE 103, FIRE 201, FIRE 202, and FIRE 221, or consent of department. Three hours each week. Formerly FS 222.*
3 semester hours

FIRE 225 Fire Investigation I (R only)
Intended to provide the student with the fundamentals and technical knowledge needed for proper fire scene interpretations, including recognizing and conducting origin and cause, preservation of evidence and documentation, scene security, motives of the firesetter, and types of fire causes. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly FS 225.*
3 semester hours

FIRE 226 Fire Investigation II (R only)
Intended to provide the student with advance technical knowledge on rule of law, fire scene analysis, fire behavior, evidence collection and preservation, scene documentation, case preparation and courtroom testimony. PREREQUISITE: *FIRE 225 or consent of department. Three hours each week. Formerly FS 226.*
3 semester hours

FIRE 228 Occupational Safety and Health for Emergency Services (R only)
Introduces the basic concepts of occupational health and safety as it relates to emergency service organizations. Topics include risk evaluation and control procedures for fire stations, training sites, emergency vehicles, and emergency situations involving fire, EMS, hazardous materials, and technical rescue. *Assessment levels: ENGL 101/ 101A, READ 120. Three hours each week. Formerly FS 106.*
3 semester hours

FIRE 231 Automatic Sprinkler Systems Design I (R and TP/SS only)
Prepares students to explain, design, and draw basic automatic sprinkler alarm systems in accordance with nationally accepted standards. Emphasis on formulas, calculations and layout of residential sprinkler systems. PREREQUISITES: *FIRE 120 and FIRE 216 or consent of department. Three hours each week. Formerly FS 231.*
3 semester hours

FIRE 232 Automatic Sprinkler Systems Design II (R and TP/SS only)
Prepares students to explain, design, and draw advanced automatic sprinkler systems in accordance with nationally accepted standards. Emphasis on commercial automatic sprinkler systems. PREREQUISITE: *FIRE 231. Three hours each week. Formerly FS 232.* *3 semester hours*

FIRE 241 Fire Alarm Systems Design I (R and TP/SS only)
Prepares students to explain, design, and draw basic fire alarm systems in accordance with nationally accepted standards. Emphasis on residential alarm systems. PREREQUISITES: *FIRE 120 and FIRE 216 or consent of department. Three hours each week. Formerly FS 261.* *3 semester hours*

FIRE 242 Fire Alarm Systems Design II (R and TP/SS only)
Prepares students to explain, design, and draw advanced fire alarm systems in accordance with nationally accepted standards. Emphasis on commercial alarm systems. PREREQUISITE: *FIRE 241. Three hours each week. Formerly FS 262.*
3 semester hours

FIRE 250 Fire Protection Internship (R and TP/SS only)
Students work for college credit in the professional setting of a fire protection agency, doing management or research-related work for such agencies at the federal, state, local government, or private sector level. PREREQUISITE: *Consent of department. Minimum average of 110 hours work experience and 10 one-hour seminars per semester. Formerly FS 250.*
3 semester hours

FREN—French

FREN 099 Functional Spoken French (R and TP/SS only)
A beginning course in conversational French for travelers, students, and professionals, emphasizing pronunciation, comprehension, and the formation of spoken sentence patterns. This course provides a basis for learning and using French, emphasizing oral skills (listening and speaking) and limited reading and writing skills. Students are introduced to essential aspects of French culture. Course topics may vary. This course does not fulfill language requirements. No previous study of French is required. *Three hours each week. Formerly FR 099.* *3 semester hours*

FREN 101 Elementary French I *(HUMD[M])*
A beginning language course focusing on the study of French language and culture. Students begin to develop the ability to communicate in French through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of French is required. *In-class work is supplemented by* 20 *hours in the language learning laboratory. Three hours each week. Formerly FR 101.* *3 semester hours*

FREN 102 Elementary French II *(HUMD[M])*
A continuation of FREN 101. Students continue their study of written language, conversation, and composition as they consider cultural themes, language functions, and authentic situations. PREREQUISITE: *FREN 101 or consent of department. In-class work is supplemented by 20 hours in the language learning laboratory. Three hours each week. Formerly FR 102.* *3 semester hours*

FREN 201 Intermediate French I *(HUMD[M])*
Focuses on the study of French language and culture at the intermediate level. Students further their ability to communicate in French through an advanced consideration of cultural themes and a thorough review of French grammar to support increased focus on reading and composition. PREREQUISITE: *FREN 102 or consent of department. In-class work is supplemented by 10 hours in the language learning laboratory. Three hours each week. Formerly FR 201.* *3 semester hours*

FREN 202 Intermediate French II *(HUMD[M])*
A continuation of FREN 201. Students further their ability to communicate in French through an advanced consideration of cultural themes and a review of French grammar to support an increased focus on reading and composition. PREREQUISITE: *FREN 201 or consent of department. In-class work is supplemented by 10 hours in the language learning laboratory. Three hours each week. Formerly FR 202.* *3 semester hours*

FREN 207, 208 Readings in French Literature *(HUMD[M])*
An introduction to French literature through the reading of representative genres. Includes advanced composition, conversation, and an introduction to literary criticism through frequent themes, explications de texte, and class discussion. Class conducted in French. PREREQUISITE: *FREN 202, four years of high school French, or the equivalent. Three hours each week. Formerly FR 207, 208.*
3 semester hours

GDES—Graphic Design

GDES 116 Digital Tools for the Visual Arts
(Credit cannot be received for both ARTT 116 and GDES 116)
An examination of the digital tools used in the visual arts. Students are exposed to the theory and function of the major software packages and basic digital design principles utilized in the visual arts. Topics include operating systems, typography, vector and bitmap imaging, page layout, PDF creation and editing, timeline-based video editing, file transfer, output, web, emerging technologies, and other material relative to the digital visual arts workflow. *Two hours lecture, four hours laboratory each week. Formerly GD 116.* *4 semester hours*

GDES 120 Introduction to Digital Arts (ARTD)
Creative use of the computer as a design tool and illustrative medium. Topics include elementary digital techniques as they relate to principles of design, color, composition, and spatial relationships. Students will create a series of illustrations involving freehand and technical drawing, rendering and composition using traditional and digital tools. *Two hours lecture, four hours laboratory each week. Formerly GD 120.* *4 semester hours*

GDES 121 Fundamentals of Graphic Design I (R only)
An introduction to elements of design, spatial relationships, typography, and imagery as they apply to practical visual solutions for self-promotion, resumes, logo design, web design, and sequential systems. This course instructs the student in graphic design skills employing traditional and digital tools, materials and procedures employed in the communication arts industry. The focus will be on finding creative visual solutions to communication problems using technical skills. *Assessment level: READ 120. Two hours lecture, three hours laboratory each week. Formerly GD 121.*
3 semester hours

GDES 124 Fundamentals of Graphic Design II (R only)
A continuing examination of elements of design, spatial relationships, typography and imagery as they apply to practical visual solutions for print and web applications. PREREQUISITE: *GDES 121 or consent of department. Two hours lecture, three hours laboratory each week. Formerly GD 124.*
3 semester hours

GDES 127 Graphic Design Workflow (R only)
Process of production in graphic communications and use of terminology employed in the industry. Topics include an explanation of key productions terms, identifying applications for tasks at hand, major printing processes, preparation of typography, photography, illustration, and color for commercial output. Also covered are relationships between cost, quality, and time constraints for production, as well as recent developments in digital and print process. *Assessment level: READ 120. Three hours each week. Formerly GD 127.*
3 semester hours

GDES 134 Illustration I (R only)
Introduction to illustrative drawing and painting, using traditional and digital media. Topics include units on drawing from observation, basic composition, conceptualizing, visual narrative and sequential story telling and output for print and interactive media, the employment market, and business practices. PREREQUISITE: *ARTT 100 or consent of department. Two hours lecture, three hours laboratory each week. Formerly GD 134.*
3 semester hours

GDES 135 Illustration II (R only)
A study of major illustration topics, including advertising, editorial, narrative, sequential illustration, and storyboards. Students explore drawing from life and photo reference material, basic composition, output for print reproduction and web, the employment market and business practices. PREREQUISITE: *GDES 134 or consent of department. Two hours lecture, three hours laboratory each week. Formerly GD 135.* *3 semester hours*

GDES 136 Digital Illustration (R only)
A "hands on" course emphasizing traditional illustration skills such as visual problem solving, composition and drawing using digital media. Students will create illustrations employing a variety of techniques using multiple applications. PREREQUISITE: *ARTT/GDES 116 or GDES 120. Two hours lecture, three hours laboratory each week. Formerly GD 136.* *3 semester hours*

GDES 140 Introduction to Animation
An introduction to 2-D animation. Topics include a brief history of animation, principles of 2-D animation, use of storyboards, 2-D animation techniques, and the employment market and business practices. PREREQUISITES: *CMAP 125 and either ARTT/GDES 116 or GDES 120. Two hours lecture, four hours laboratory each week. Formerly GD 140.*
4 semester hours

GDES 210 Graphic Design I (SA+D only)
An introduction to visual thinking with an exploration of graphic design principles and practices, concept development, typography, composition, process, vocabulary, materials, and methods. Students develop problem-solving skills, creating, combining, and manipulating text and images while employing traditional and electronic design techniques. PREREQUISITES: *ARTT 100, ARTT 102, and ARTT 105; or consent of department. Assessment levels: ENGL 101/101A, READ 120. Two hours lecture, three hours laboratory each week. Formerly GD 210.* *3 semester hours*

GDES 211 Graphic Design II (SA+D only)
A continuation of GD 210, concentrating on developing a more personal approach to design solutions, conceptual skills, invention, discovery, and perceptual abilities within a communications context. Using both traditional hand and computer technologies, students do a thorough research process on more advanced projects that explore both static and moving formats. PREREQUISITES: *GDES 116, GDES 210, and GDES 220; or consent of department. Two hours lecture, three hours laboratory each week. Formerly GD 211.* *3 semester hours*

GDES 212 Publication Design with InDesign (R only)
A practical application of design fundamentals for single and multipage publications. Students use industry standard page assembly software while creating well-designed layouts for publications of all kinds. In addition to the functions of the software, topics include typography, graphics, color, aesthetic page flow, and transition design. PREREQUISITE: *ARTT/GDES 116 or consent of department. Two hours lecture, four hours laboratory each week. Formerly GD 212.* *4 semester hours*

GDES 214 Photoshop for Graphics and Photography (R only)
(Also offered as PHOT 214. Credit cannot be received for both GDES 214 and PHOT 214.)
An in-depth study of digital editing as it applies to the needs of the graphics or photography student and professional. Students manipulate scanned images and digital photographs in preparation for publication layout and design, web output, use in other software packages, or immediate output. Topics include photo-restoration, composite imaging, masking, and the adjustment and correction of images used in graphic design and photography. PREREQUISITE: *None, but previous computer experience is necessary. It is strongly recommended that photography majors take PHOT 161 prior to this course. Two hours lecture, four hours laboratory each week. Formerly GD 214.* *4 semester hours*

GDES 216 Illustrator for Vector Graphics (R only)
An in-depth study of vector graphics creation. Students design, create, and manipulate images for integration in publication layout and design, web output, use in other software packages, or immediate output. Topics include vector imaging tools, technical illustration, bitmap to vector conversion, typography, and output considerations. PREREQUISITE: *None, but previous computer experience is necessary. Two hours lecture, four hours laboratory each week. Formerly GD 216.* *4 semester hours*

GDES 218 Graphic Design for the Web (R only)
An examination of principles of design and design considerations as applied to the creation of web pages and websites. Emphasis is on visual communication principles and visual presentation aspects of webpages, including page layout, typography, color theory, navigation, and image creation and editing. Students will apply principles of design in the creation of a website. PREREQUISITE: *ARTT/GDES 116 or GDES 214/PHOT 214 or consent of department. Two hours lecture, four hours laboratory each week. Formerly GD 218.* *4 semester hours*

GDES 220 Typography I (SA+D only)
Typography is introduced as both an art form and visual communication tool. Students will gain an understanding of the historical, technical, and practical aspects of typography, including a solid foundation in type classification and measurements systems. Students will produce compositions in a variety of formats emphasizing original solutions to problems concerning the organization of textual information. PREREQUISITES: *ARTT 100, ARTT 102, and ARTT 105; or consent of department. Assessment levels: ENGL 101/101A, READ 120. Two hours lecture, three hours laboratory each week. Formerly GD 220.* *3 semester hours*

GDES 221 Typography II (SA+D only)
Builds upon the basic knowledge and experience gained in GDES 220. Students will further their awareness of the expressive nature of type with an emphasis toward developing their own personal typographic style. Students will create work in a variety of formats emphasizing originality. Typography in motion will be introduced. PREREQUISITES: *GDES 116, GDES 210, and GDES 220; or consent of department. Two hours lecture, three hours laboratory each week. Formerly GD 221.* *3 semester hours*

GDES 224 Graphic Design III (R only)
A study in creative design applied to graphic problems for publication, web, and television media. Topics include studio skill development and production methods, portfolio review, and resume preparation. PREREQUISITE: *GDES 124 or consent of department. Two hours lecture, three hours laboratory each week. Formerly GD 224.* *3 semester hours*

GDES 228 Advanced Graphic Design for Web and Interaction (R only)
Intended for students seeking advanced web, user interface and interaction design strategies. Emphasis is on visual aspects of responsive, adaptive and content-first approaches. Students will apply advanced principles of design in the creation of layouts and graphics for a variety of web/mobile environments. PREREQUISITES: *GDES 214 or PHOT 214, and GDES 218, or consent of department. Two hours lecture, four hours laboratory each week. Formerly GD 228.* *4 semester hours*

GDES 230 Advanced Image Editing and Correction (R only)
(Also offered as PHOT 230. Credit cannot be received for both GDES 230 and PHOT 230.)
An advanced study of digital editing and image correction as it applies to the needs of the graphics or photography student and professional. Students perform contrast and color correction on more difficult scanned images and digital photographs in an effort to gain aesthetic control of the image prior to final output. Topics also include visual and mechanical calibration of input and output devices. PREREQUISITE: *GDES 214, PHOT 214 or consent of department. Two hours lecture, four hours laboratory each week. Formerly GD 230.*
4 semester hours

GDES 234 Illustration III
Advanced projects selected and completed by students in consultation with the instructor, departmental faculty, or working professionals. PREREQUISITE: *GDES 135 or consent of department. Two hours lecture, three hours laboratory each week. Formerly GD 234.* *3 semester hours*

GDES 240 Animation 2: 3-D Modeling
An introduction to 3-D animation. Topics include principles of 3-D animation, virtual environments, modeling, image enhancement and 3-D animation techniques. PREREQUISITE: *GDES 140. Two hours lecture, four hours laboratory each week. Formerly GD 240.*
4 semester hours

GDES 242 Animation 3: Motion Capture and Character Development (R only)
The study of motion capture systems and character development as it applies to the production of animation, gaming, and video. Students will gain practical experience in the use of motion capture technology to collect real-time data. Following data capture, students will transfer the information to a computer system using 3-D software where it will be manipulated, enhanced, and assigned to a character. PREREQUISITE: *GDES 240. Two hours lecture, three hours laboratory each week. Formerly GD 242.*
4 semester hours

GDES 269 Special Graphic Design Assignments (R only)
Offered on an individual basis to majors so that students may extend their studies by in-depth exploration of a particular specialization within the curriculum. Students develop proficiencies with previously introduced materials and techniques and their application to specific communication problems. The following letter symbols indicate the specific area of study:
A – Book Illustration D – Graphic Design
PREREQUISITES: *GDES 121 and consent of department. May be repeated for credit. Hours to be assigned by the chairperson. Formerly GD 269.*
1–*4 semester hours*

GDES 285 Graphic Design Internship (R only)
An opportunity for college credit in a professional design studio, lab, or other facility. A limited number of internships are available through the department each semester, or the student may propose an internship. PREREQUISITES: *Graphic design majors with advanced standing and consent of department. Forty-five hours of work required per semester hour of credit. Letter designators in the schedule of classes will indicate the number of credits. Periodic meetings with coordinator. May be repeated for a total of six semester hours. Formerly GD 285.*
1–*4 semester hours*

GEOG—Applied Geography

GEOG 101 Introduction to Geography *(BSSD)* **CE-R**
Introduction to geography as a field of study. The course consists of an extensive examination of physical and cultural factors that contribute to and produce the variable character of the earth's surface and a discussion of the significance of geographic concepts and factors to world affairs. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly GE 101.*
3 semester hours

GEOG 105 Cultural Geography *(BSSD)* **CE-R**
Examination of the basic concepts of human geography and the forces and factors shaping the cultural character of the surface of the earth viewed as the home of the human race. Topical studies include population, settlement patterns, and other political, economic, and cultural phenomena. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly GE 102.*
3 semester hours

GEOG 113 Economic Geography *(BSSD)* **CE-R**
Introduction to the principles of economic geography. Lecture and studio/laboratory study of modern concepts and techniques underlying the whys of locational analysis, spatial and functional organization of economic areas and regions. Special emphasis placed on the relationship of culture, resources, technology, and the physical biotic landscape to the world geographic patterns of economic activity. Projects and field assignments. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Two hours lecture, two hours studio/laboratory each week. Formerly GE 103. 3 semester hours*

GEOG 124 Physical Geography *(NSLD)* (R only) **CE**
Fundamentals of physical geography as a foundation for human activities. Lecture and studio/laboratory study of the role and patterns of climate, soil, landforms, drainage, vegetation, and other geographic phenomena. Special analysis of the physical biotic character of the surface of the earth as determined by natural and cultural processes with emphasis on the physical geography of urban places. Projects and field assignments. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours lecture, two hours studio/laboratory each week. Formerly GE 104. 4 semester hours*

GEOG 130 Global Geography *(BSSD[M])*
Examination for the general student of global regions, patterns, trends, and geographic relationships which together form a basis for comprehending the mosaic of world affairs. An introduction to geographic facts and development of skills needed to appraise critical topics and issues normally covered in college-level disciplines. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly GE 110. 3 semester hours*

GEOG 211 Political Geography CE-R
An extensive examination of the political-geographic factors involved in shaping the character of world, national, and local political communities. Special emphasis placed on the controversial concepts of geopolitics and geostrategy as well as selected contemporary problems affecting the viability of modern-day political units. Field trips and special projects. PREREQUISITE: *Second-year standing or consent of program coordinator. Three hours each week. Formerly GE 201. 3 semester hours*

GEOG 222 Geography of the United States (R only) **CE**
A regional examination of the physical and cultural patterns characteristic of the United States. Students will study geographic concepts and perspectives associated with different regions of the nation. The environment and cultural variables in each region are examined in detail to determine their role in the formation of its unique landscape. *Three hours each week. Formerly GE 202.*
3 semester hours

GEOG 235 Preserving Our Natural Heritage: The Geography of Conservation and Natural Resources CE-R

This course will explore issues in conservation responsibilities and concepts relating to environmental and natural resources including soils, minerals, water, forests, pollution, wildlife, natural hazards, aesthetics, and human interaction. Fieldwork required. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly GE 210.* *3 semester hours*

GEOG 240 Introduction to Cartography (R only) **CE**

General introduction to cartography's history, theory, and use of maps. Study of various types of maps, charts, and plans, mapscales, coordinates, and projections. Techniques, methods, problems of design, compilation, and construction of maps and graphics. Map symbolization and representation of topographic, hydrographic, geographic, and other phenomena. Fundamental concepts as applicable to mapping, surveying, and aerial photography. Techniques and methods of presenting data in graphic forms. *Assessment levels: ENGL 101/ 101A, MATH 093/096, READ 120. Two hours lecture, two hours laboratory each week. Formerly GE 151.*

3 semester hours

GEOG 250 Interpretation of Geographic Imagery: Use and Analysis (R only) **CE**

Map and remote sensing image evaluation. History, theory, and techniques of map and remote sensing analysis. Examination of the reliability and utility of maps and remote sensing imagery for solving geographic problems. Interpretation of cultural and natural phenomena using these types of images. PREREQUISITE: *GEOG 240 or consent of program coordinator. Two hours lecture, two hours studio/laboratory each week. Formerly GE 152.*

3 semester hours

GEOG 251 Principles of Map Design (R only)

Studio/laboratory experience with the application and utilization of modern tools and techniques of cartography and graphics. Develops special skills associated with the broad scope of cartographic activities as practiced in public and private mapping and allied agencies. Special projects encompass mapmaking, field studies, map reproduction, photo-compilation, and other tasks as assignments under the direction of an experienced practitioner. PREREQUISITES: *GEOG 240 and GEOG 250, or consent of program coordinator. One hour lecture, four hours studio/laboratory each week. Formerly GE 251.*

3 semester hours

GEOG 255 Introduction to Computer Mapping (R only) **CE**

Introducing students to concepts and applications that are essential to the study of automated cartography, this course explores techniques used to capture, store, process, and display data in map form. Emphasis in the course is placed on the application of computer use and graphic design to create assorted map products, both general purpose and thematic. PREREQUISITE: *GEOG 240 or consent of program coordinator. Two hours lecture, two hours laboratory each week. Formerly GE 252.*

3 semester hours

GEOG 260 Introduction to Geographic Information Systems (R only) **CE**

Geographic information systems (GIS) integrates the application of spatial data handling procedures with the study of geographic problems. The course utilizes computer software designed for the study of environmental problems based upon data compiled from maps and remote sensing imagery. This course will serve as a basic introduction to the concepts and techniques of GIS. The problems used for study in this course are selected to provide real-world examples suitable for solution through the use of GIS. PREREQUISITE: *GEOG 240 or consent of program coordinator. Two hours lecture, two hours laboratory each week. Formerly GE 261.* *3 semester hours*

GEOG 265 Research Topics in Applied Geography (R only) **CE**
Research topics in geography, designed to develop the ability to originate, formulate, and perform geographic studies commonly encountered in public and private agencies. Special topics cover physical, economic, social, and political matters selected to fit individual and team approaches to geography problems characteristic of the Washington metropolitan area. Standard research techniques are stressed. PREREQUISITES: *Minimum of nine hours in applied geography and consent of program coordinator. Two hours lecture, two hours studio/laboratory each week. Formerly GE 262.*
3 semester hours

GEOG 270 Advanced Geographic Information Systems (R only)
Offers training in several advanced GIS analytical methods widely used by industry and government, such as network, spatial, and three-dimensional analyses. Uses the latest software: Network Analyst, Spatial Analyst, and 3-D Analyst, and may introduce other GIS operations and analyses, as developed. Course components include laboratory exercises, exams, and a term project using one or more of the analytical tools learned during the semester. PREREQUISITE: *GEOG 260 or consent of program coordinator. Two hours lecture, two hours laboratory each week. Formerly GE 263.* *3 semester hours*

GEOL—Geology

GEOL 101 Physical Geology *(NSLD)*
A study of the physical aspects of the earth. Topics explored in this course include minerals, rocks, soils, structures, landforms, plate tectonics, volcanoes, earthquakes, streams, erosion, and weathering. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours lecture, three hours laboratory each week; field trips. Formerly GL 101.* *4 semester hours*

GEOL 102 Historical Geology *(NSLD)*
This course covers the application of geologic concepts to the interpretation of the evolution of the earth. Topics include the use of sedimentary rocks as tools for unraveling earth history, the historical development of geologic principles, the nature and utility of fossils, the importance of plate tectonics, and a survey of the evolution of earth systems and organisms. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours lecture, three hours laboratory each week; field trips. Formerly GL 102.* *4 semester hours*

GERM—German

GERM 101 Elementary German I *(HUMD[M])*
A beginning language course focusing on the study of German language and culture. Students begin to develop the ability to communicate in German through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of German is required. *In-class work is supplemented by 20 hours in the language learning laboratory. Three hours each week. Formerly GR 101.*
3 semester hours

GERM 102 Elementary German II *(HUMD[M])*
A continuation of GERM 101. Students continue their study of written language, conversation and composition as they consider cultural themes, language functions, and authentic situations. PREREQUISITE: *GERM 101 or consent of department. In-class work is supplemented by 20 hours in the language learning laboratory. Three hours each week. Formerly GR 102.* *3 semester hours*

GERM 201 Intermediate German I *(HUMD[M])*
Focuses on the study of German language and culture at the intermediate level. Students further their ability to communicate in German through an advanced consideration of cultural themes and a thorough review of German grammar to support increased focus on reading and composition. PREREQUISITE: *GERM 102 or consent of department. In-class work is supplemented by 10 hours in the language learning laboratory. Three hours each week. Formerly GR 201.* *3 semester hours*

GERM 202 Intermediate German II *(HUMD[M])*
A continuation of GERM 201. Students further their ability to communicate in German through an advanced consideration of cultural themes and a review of German grammar to support an increased focus on reading and composition. PREREQUISITE: *GERM 201 or consent of department. In-class work is supplemented by 10 hours in the language learning laboratory. Three hours each week. Formerly GR 202.* *3 semester hours*

GNDS—Gender Studies

GNDS 102 Understanding LGBT Identities
An inter-disciplinary, cross-cultural examination of lesbian, gay, bisexual and transgender (LGBT) identities in contemporary United States society that draws from history, literature, sociology, philosophy, psychology and communications studies to understand the diversity of gender expressions and sexual orientations. This course surveys who LGBT people are and how academic study of these identities has developed. It explores the connection between women's studies and gender studies, and the ways women's studies has grown to include analysis of how gender and sexual orientation interact and intersect, and how heterosexism and homophobia function in various contexts and affect everyone in society. This course requires students to engage both written and visual texts, to apply and connect material from the course to life outside the classroom, and to investigate sexual minority identities in terms of communities, cultures and political movements. *Assessment levels: ENGL 101/101A, READ 120 or consent of program coordinator. Three hours each week. Formerly GS 102.*
3 semester hours

HINM—Health Information Management

HINM 115 Medical Terminology I (TP/SS only) **CE**
The basic structure of medical words, including prefixes, suffixes, roots, combining forms, and plurals. Pronunciation, spelling, and definition of medical terms. Emphasis on building a professional vocabulary required of the beginning medical professional. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120, or consent of program coordinator. Two hours each week. Formerly HI 125.*
2 semester hours

HINM 116 Medical Terminology II (TP/SS only) **CE**
A continuation of HINM 115. Includes medical terminology related to body systems, cancer medicine, radiology and nuclear medicine, and pharmacology. PREREQUISITE: *HINM 115. Two hours lecture/discussion each week. Formerly HI 126.*
2 semester hours

HINM 120 Concepts of Disease (TP/SS only) **CE**
A survey course designed specifically for students enrolled in health programs. General principles, classification, causes, and treatment of selected disease processes are presented. PREREQUISITES: *Admission to the health information management program or the diagnostic medical sonography program, or consent of program coordinator; BIOL 130 and BIOL 131 or HINM 115. Three hours each week. Formerly HI 135.*
3 semester hours

HINM 133 Assembly and Analysis and Alternate Health Care Delivery (TP/SS only) **CE**
Designed to introduce the student to the following aspects of the medical information system: health record assembly and analysis and alternate health care delivery systems. PREREQUISITE: *Admission to the health information management program or consent of program coordinator. Assessment levels: ENGL 101/101A, READ 120, or consent of program coordinator. One hour lecture, two hours laboratory each week. Formerly HI 103.* *2 semester hours*

HINM 140 Introduction to Health Information Management (TP/SS only) **CE**
An introduction to the historical development of the health care field and organization of health institutions, the health information profession, and health information departments. Emphasis is placed on management of patient index, numbering systems, and filing systems. PREREQUISITE: *Admission to the health information management program or consent of program coordinator. Assessment levels: ENGL 101/101A, MATH 093/096, READ 120, or consent of program coordinator. One hour each week. Formerly HI 104.* *1 semester hour*

HINM 145 Legal Aspects of Health Information (TP/SS only) **CE**
This course introduces the following topics: legal aspects; retention and retrieval; forms design; and tumor registry with an emphasis placed on managerial aspects. PREREQUISITE: *Admission to the health information management program or consent of program coordinator. Assessment levels: ENGL 101/101A, MATH 093/096, READ 120, or consent of program coordinator. One hour each week. Formerly HI 105.* *1 semester hour*

HINM 146 Introduction to and Legal Aspects of Health Information Laboratory (TP/SS only)
This course provides laboratory experience for topics covered in HINM 140 and HINM 145. Basic computer literacy and keyboarding skills are necessary. PRE- or COREQUISITES: *HINM 140 and HINM 145, or consent of program coordinator. Two hours laboratory each week. Formerly HI 106.*
1 semester hour

HINM 150 Introduction to Pharmacology (TP/SS only) **CE**
Designed to give an overview of pharmacology to the student. Examines the prescription drug process (dosage calculation, administrations, and different drug forms) and reviews basic federal and state regulations. Focuses on specific disease states and how certain drugs work to alleviate and treat the conditions for which they are prescribed. Approaches the various drug classes, the actions on physiology, and their relationship to various disease states. PREREQUISITES: *Admission to the health information management program or consent of program coordinator; BIOL 130 and BIOL 131 and HINM 115. One hour each week. Formerly HI 214.*
1 semester hour

HINM 155 CPT Coding (TP/SS only) **CE**
An introduction to the principles and conventions of CPT/HCPCS clinical classification system used in outpatient and physician office settings. Related topics such as ethical coding standards, federal rules and regulations, and fraud and abuse definitions/issues are included. Students should have a basic knowledge of human anatomy and physiology in order to succeed in this coding course. PREREQUISITES: *HINM 133 and HINM 120, and either HINM 115 or BIOL 130 and BIOL 131, or consent of program coordinator.* COREQUISITE: *HINM 165. Two hours each week. Formerly HI 213.*
2 semester hours

HINM 165 ICD-10 Coding
An introduction to ICD-10-CM/PCS classification with considerable time spent coding diagnoses and procedures. This course will include exposure in abstracting and indexing diagnostic and procedure codes as well as retrieving medical information for research. PREREQUISITES: *HINM 133, HINM 120, and either BIOL 130 and BIOL 131 or HINM 115, or consent of program coordinator. Three hours lecture, two hours laboratory each week. Formerly HI 215.* *4 semester hours*

HINM 170 Management of Health Information (TP/SS only) **CE**
This course introduces the students to management techniques for controlling functions in a health record department, such as request for proposals, contracts, and personnel. Basic computer literacy and keyboarding skills are necessary. PREREQUISITES: *CMAP 120, HINM 133, HINM 146 and HINM 115, or consent of program coordinator. One and one-half hours lecture, one hour laboratory each week. Formerly HI 113.* *2 semester hours*

HINM 175 Automation of Health Information (TP/SS only) **CE**
This course introduces the students to computer applications in health care. Basic computer literacy and keyboarding skills are necessary. PREREQUISITES: *CMAP 120, HINM 133, HINM 146 and HINM 115, or consent of program coordinator. One and one-half hours lecture, one hour laboratory each week. Formerly HI 114.*
2 semester hours

HINM 200 Professional Practice Experience I (TP/SS only)
Supervised practice in a health information department. The student will perform functions related to the analysis and reporting requirements for health records, the storage and retrieval of health records, and the patient admission process. PREREQUISITES: *HINM 133 and HINM 146, or consent of program coordinator. Requires 60 hours of combined supervision on campus and/or in a clinical setting. Formerly HI 111.* *1 semester hour*

HINM 210 Statistics for Health Information (TP/SS only) **CE**
This course includes topics covering health data statistics and data presentation. The student will gain an in-depth knowledge of basic hospital statistics and application of the same. Basic computer literacy and keyboarding skills are necessary. PREREQUISITES: *CMAP 120, HINM 133, HINM 146 and HINM 115, or consent of program coordinator. One and one-half hours lecture, one hour laboratory each week. Formerly HI 203.* *2 semester hours*

HINM 215 Performance Improvement in Health Information (TP/SS only) **CE**
This course includes topics covering performance improvement. The student will be introduced to the concepts of medical care evaluation, concurrent review, and the importance of accurate data display. Basic computer literacy and keyboarding skills are necessary. PREREQUISITES: *CMAP 120, HINM 133, HINM 146 and HINM 115, or consent of program coordinator. One and one-half hours lecture, one hour laboratory each week. Formerly HI 204.* *2 semester hours*

HINM 220 Advanced Coding and Reimbursement (TP/SS only) **CE**
Emphasis on management principles and techniques of clinical classification and reimbursement systems in health care settings. The course covers coding competency skills, coding quality control and compliance issues, and federal government compliance institutions. Other topics include reimbursement software applications, data definitions, data security, data compliance and regulatory requirements. PREREQUISITES: *HINM 155 and HINM 165, or consent of program coordinator. One hour lecture, four hours laboratory each week. Formerly HI 220.* *3 semester hours*

HINM 225 Ambulatory Coding (TP/SS only) **CE**
Designed to enhance the student's ability in ambulatory care classification and coding. Students apply CPT and ICD coding for outpatient records in a variety of ambulatory settings including physician office, emergency room, and outpatient surgery. PREREQUISITE: *HINM 165 or consent of program coordinator. Two hours each week. Formerly HI 221.* *2 semester hours*

HINM 230 Electronic Patient Billing (TP/SS only) **CE**
An introduction to electronic patient billing in ambulatory settings using various insurance and reimbursement systems. Students prepare health insurance claim forms for various types of insurance plans and use this information as a practice management and outcomes assessment tool. Additional topics include billing and claims management issues. PREREQUISITE: *Admission to the health information management program or consent of program coordinator. Two hours each week. Formerly HI 222.* *2 semester hours*

HINM 271 Professional Practice Experience II (TP/SS only)
Supervised practice in the following health record functions: release of information, supervision, vital records, coding of medical data, data abstracting, DRG coding and assignment, and cancer registry activities. PREREQUISITES: *HINM 170, HINM 120, HINM 155, and HINM 165, or consent of program coordinator. Requires 120 hours of combined supervision on campus and/or in a clinical setting. Formerly HI 211.* *2 semester hours*

HINM 272 Professional Practice Experience III (TP/SS only)
Supervised practice in performance improvement; basic statistical activities; and exposure to health record functions in alternate care environments (i.e., long-term care, mental health, ambulatory care, and government or professional organizations). Students will take a mock national accreditation examination. PREREQUISITES: *HINM 210 and HINM 215, or consent of program coordinator.* PRE- or COREQUISITE: *HINM 271 or consent of program coordinator. Requires 60 hours of combined supervision on campus and/or in a clinical setting. Formerly HI 212.* *1 semester hour*

HINM 280 Research in Health Information (TP/SS only) **CE**
This course is designed to enhance the student's ability in research methodologies. The student will use computerized databases and spreadsheets to prepare a project related to a health care topic. Basic computer literacy and keyboarding skills are necessary. PREREQUISITES: *CMAP 120, MATH 110 or MATH 117, HINM 210, and HINM 215, or consent of program coordinator. Two hours laboratory each week. Formerly HI 226.* *1 semester hour*

HIST—History

HIST 112 Women in World History *(HUMD[M])* (R only)
The course deals with the history of women in Asia, the Middle East, Africa, and Latin America in the context of the history of these cultural regions. It also addresses some of the common issues facing women in the Third World. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HS 112.* *3 semester hours*

HIST 114 The World in the 20th Century *(HUMD[M])*
Focuses on global developments: the origins and aftermath of two world wars; the birth of mass movements and mass society; the crisis of democracy and the rise of communism and fascism; the emergence of the superpowers; modernization, conflicts, and revolutions in the non-Western world as well as autonomous processes in Africa, Asia, Latin America; North-South relations. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/ discussion each week. Formerly HS 114.*
3 semester hours

HIST 116 World History: A Comparative Survey from the Ancient World to A.D. 1500 *(HUMD[M])*
One of two related courses (with HIST 117), which may be taken in either order. These courses cover the world's great cultures, religious, and political systems. They offer the student an opportunity to understand contemporary life in terms of the accumulated cultural experiences of the world and to appreciate the growing interdependence of modern nations. HIST 116 is a comparative inquiry into the emergence and flowering of ancient Near Eastern and Mediterranean civilizations; the Christian Middle Ages and Renaissance in Europe; China and the development of Confucianism, Taoism, and Buddhism; Hinduism and Indian empires; Islam—its conquests and the rise of the Ottoman Empire; civilizations of the Americas, and African developments. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HS 116.*
3 semester hours

HIST 117 World History: A Comparative Survey from A.D. 1500 to the Present *(HUMD[M])*
One of two related courses (with HIST 116), which may be taken in either order. These courses cover the world's great cultures, religious and political systems. They offer the student an opportunity to understand contemporary life in terms of the accumulated cultural experiences of the world and to appreciate the growing interdependence of modern nations. HIST 117 is a comparative course covering autonomous local developments in the various parts of the world as well as the settling of the New World; the scientific and industrial revolutions and their diffusion; Western dominance of the non-Western world and its decline; the rise of mass societies, Marxism, worldwide revolutions; the effects of two world wars; the struggles to modernize. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HS 117.*
3 semester hours

HIST 146 History of the Ancient World *(HUMD)*

A survey of the ancient Near Eastern and Greco-Roman societies and cultures in their unique setting, exploring the path that led to the organization of cities; written communication; forms of early science and technology; the artistic traditions in Mesopotamia and Egypt; a golden age of art, literature, and philosophy in Greece; and Roman accomplishments in politics, administration, law, and engineering. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly HS 186.* *3 semester hours*

HIST 147 History of Europe from the Fall of Rome to the 17th Century *(HUMD)* **CE**

One of two related courses (with HIST 148), which may be taken in either order. These courses trace the accumulated experience of Western civilization and its worldwide relationships and provide a contextual framework for integrating all areas of Western human activity and thought. HIST 147 is an inquiry into the foundations of Western civilization and its odyssey to the 17th century. Focuses on areas such as the background and the legacy of the ancient world, the distinctive medieval world view, the creation of new social and religious ideals during the Renaissance and Reformation, relationships between cultural and political institutions, the growth of absolutism and constitutionalism, artistic and literary creativity. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly HS 151.*

3 semester hours

HIST 148 History of Europe from the 17th Century to the Present *(HUMD)* **CE**

One of two related courses (with HIST 147), which may be taken in either order. These courses trace the accumulated experience of Western civilization and its worldwide relationships and provide a contextual framework for integrating all areas of Western human activity and thought. HIST 148 spotlights the changes in thought, social, economic, and political structures from the Copernican revolution and the Enlightenment through the American and French revolutions, the traumas of economic depressions, world wars, and the upheavals of the contemporary world. Topics will be examined such as the tensions between individual liberty and traditional powers of state and society, the rise of ideologies, pressures of industrialism and national identity, the problems of the Darwinian hypothesis, the role of women in society, the rise of masses, the disenchantment with traditional liberalism and totalitarian alternatives, as well as the reflections of these human endeavors and anxieties in the arts and letters of these centuries. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly HS 161.* *3 semester hours*

HIST 190 History of Sport in America *(HUMD)*

This course comprises a study of sports in America from early settlement to the present. The course will include the following topics: European origins of sport; Enlightenment/Empirical precedents; roots, history, and periodization of sports in America; Native American sports; sports in the Colonial period; changing sporting events in the 1700s and 1800s; the rise of organized sport; America at the Olympics; increased involvement in sports by women and minorities—mid-1900s; post–World War II sports, domestic and global; business involvement in sports—1960s; collegiate versus professional athletes from the 1970s to the present; the state of American sport today. *Assessment levels: ENGL 101/101A, READ 120. Formerly HS 118.* *3 semester hours*

HIST 200 History of the United States, a Survey Course: from Colonial Times to 1865 *(HUMD)* **CE**

One of two related courses (with HIST 201), which may be taken in either order. European exploration, settlement, and culture in the British North American colonies; movement for independence and constitutional government; foreign relations and foreign policy; efforts toward a more democratic and egalitarian society; social, cultural, and intellectual growth in the new republic; Western expansion and economic development; conflict over slavery and the nature of the union; the Civil War. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly HS 201.* *3 semester hours*

HIST 201 History of the United States, a Survey Course: from 1865 to the Present *(HUMD)* **CE**

One of two related courses (with HIST 200), which may be taken in either order. Post-Civil War Reconstruction; the industrial revolution and rise of the city; the new immigration; the social, cultural, and political responses to these changes; the emergence of the United States as a more active world power. American society in the 1920s, the Great Depression, the Cold War, and the controversies over the American role in world affairs; new developments in modern American society and culture. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly HS 202.* *3 semester hours*

HIST 205 Technology and Culture in the Western World *(HUMD)* (R only)

Focus upon selected topics in the history of technology, concentrating on the period from the Renaissance to the 20th century's "brave new world" of science, technology, and industry. Relates technological development with diverse patterns of Western culture as it evolved within this historic framework. Designed to fit the needs and interests of students in technological programs, as well as those following general education or liberal arts curricula. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly HS 120.*

3 semester hours

HIST 209 History of Asian Americans *(HUMD[M])* (R only)

A historical survey of the diverse experience of Asian Americans in the United States. Topics include international context of Asian immigration; immigration and livelihood; hostility and conflict; social organization of Asian immigrant communities; resistance to oppression; women, families, and cultural dilemma; changing fortunes; new immigrants and refugees; the myth of a "model minority"; and other current issues. *Assessment levels: ENGL 101/101A, READ 120.Three hours each week. Formerly HS 137.* *3 semester hours*

HIST 211 History of Latinos in the United States *(HUMD[M])*

Addresses the historical, cultural, and contemporary experiences of six of the major Latino groups in the United States: Mexicans, Cubans, Puerto Ricans, Dominicans, Central Americans, and South Americans. Traces the Native American, Spanish, and African roots of Latinos and follows their economic, political, and cultural development in the United States up to the present. Highlights the similarities and differences in the Latino experience of migration and settlement. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week Formerly HS 138.* *3 semester hours*

HIST 225 History of Maryland

A survey of Maryland political, economic, social, and cultural history from colonial times to the present. Special attention is focused on the people who came to Maryland and contributed their heritage to the rich social and cultural institutions taking shape in this state. Maryland is viewed both as a microcosm of American history and as a unique institution with its own special identity. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly HS 105.*

3 semester hours

HIST 228 Women in the Western World *(HUMD[M])* (R only)

Surveys the realities and myths of woman's role from the ancient world to modern American and European industrial society. It examines the position of women in the cultures and social structures at various stages in the development of Western history, explores the emergence and growth of the women's rights movement, and the modes of continuity and change when new opportunities emerge for women. *Assessment levels: ENGL 101/ 101A, READ 120. Three hours each week. Formerly HS 110.*

3 semester hours

HIST 233 Alternative Lifestyles: 19th Century American Utopias
(HUMD) (R only)
An examination of various searches for utopian order through communitarian experiment in 19th century United States. Major emphasis on religious and secular communitarian experiments of the period, for example, Brook Farm, Oneida, and Amana. The class will create a constitution for its own model community to conform to the ideals, circumstances, and realities of those experiments. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly HS 113.*
3 semester hours

HIST 235 The History of African Americans to 1865
(HUMD[M])
One of two related courses (with HIST 130), which may be taken in either order, that survey the history of African Americans in America. Topics include theories of the origins of human life and civilization in Africa; slavery in the ancient and modern worlds; the Atlantic slave trade; slavery in the Americas; the transformation of Africans to African Americans; the development of African American culture; the antislavery movement; and the attempt of African Americans to make the Civil War a war for emancipation. This course does not substitute for HIST 236. *Assessment levels: ENGL 101/ 101A, READ 120. Three hours each week. Formerly HS 129.* *3 semester hours*

HIST 236 The History of African Americans Since 1865
(HUMD[M])
One of two related courses (with HIST 235), which may be taken in either order, that survey the history of African Americans from their beginnings in Africa to the present. Topics include the Washington–Du Bois debate, African American contributions to the world wars, the Harlem Renaissance, the struggle for equality, and strategies for continued economic, political, and social progress. This course does not substitute for HIST 235. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HS 130.*
3 semester hours

HIST 240 Civil Rights in America
(HUMD[M])
A survey of the civil rights movement in America from post-Reconstruction to the present. Designed to show how the civil rights movement transformed America and how the struggle for rights in America has become a struggle of communities and individuals trying to weave civil rights into a tapestry of social and economic reality. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HS 136.* *3 semester hours*

HIST 242 Open Topics in History, Including Foreign Travel
This course outlines briefly the geographic, economic, political, and cultural background of the region in which travel will take place. It focuses on the particular country of the journey's destination and examines the scope of its history, culture, and special achievements from early times to the present. Special lectures by local professors on selected topics at universities, the country's parliament, or other institutions of interest are scheduled in addition to visits to museums and the country's most outstanding sites. *Formerly HS 200. 3 semester hours*

HIST 245 Latin American History
(HUMD[M])
A brief historical survey from Cortes to Castro: Latin America's triple origin in Iberia, Africa, and Indian civilization; the conquest and three centuries of colonial existence as determinants of nationality and culture; the political break with Europe and the development of independent national life. Emphasis on economic development, agrarian reform, and 20th century movements for political and social change in the major states and upon relations with the United States. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly HS 203.*
3 semester hours

HIST 247 East Asian Civilization
(HUMD[M])
An interdisciplinary survey of the development of civilization in China, Japan, and Korea from prehistory to early seventeenth century. Topics for discussion include society, economy, politics, religion, philosophy, literature, art, science, and technology. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HS 207.*
3 semester hours

HIST 250 Modern Asia *(HUMD[M])*
A survey of the political, economic, and social changes of Asian societies, mainly from the 16th century to the present. The course emphasizes the creation of modern Asia by the West and the response of Asian societies to Western impact. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HS 208. 3 semester hours*

HIST 252 The United States and 20th Century World Affairs *(HUMD)*
A study of the emergence of the United States as a more active and involved world power from the presidency of Theodore Roosevelt to the present. More than a study of diplomatic history, this course gives much attention to the internal debates and struggles over foreign policy—neutrality, internationalism, the peace movements, isolationism, and interventionism. Aspects of social, political, and economic history are examined in terms of their relationship to and impact upon the nation's foreign relations. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HS 210. 3 semester hours*

HIST 255 Conflict in the Modern Middle East *(HUMD[M])*
This course examines the contemporary conflicts and problems of the Middle East and their impact upon world politics, including U.S. foreign policy. It covers the period from the late 18th century to the present and explores the Islamic heritage, the impact of Western imperialism, modernization and the tension between traditionalism and modernity, the rise of Arab nationalism and political revolutionary change, inter-Arab rivalries, the Arab-Israeli conflict, the impact of oil, and the role of the superpowers. *Assessment levels: ENGL 101/ 101A, READ 120. Three hours each week. Formerly HS 214. 3 semester hours*

HIST 257 Modern Military History 1494-1815 *(HUMD)*
Surveys European military history within a broad framework through which the student may view many aspects of historical events and human behavior. The course includes an examination of theoretical concepts and debates over the analysis of warfare in history. Topics include: the dynastic wars of the 15th to the 18th centuries, the Thirty Years War, colonialism, the American and French Revolutions, and the Napoleonic Wars. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HS 217. 3 semester hours*

HIST 258 Modern Military History 1815-Present *(HUMD)*
Surveys European military history within a broad framework through which the student may view many aspects of historical events and human behavior. The course includes an examination of theoretical concepts and debates over the analysis of warfare in history. Topics include: the financial, strategic, tactical, and technological developments of warfare; new imperialism; total war; race and gender; terrorism; and torture. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HS 218. 3 semester hours*

HIST 260 The United States since 1945 *(HUMD)*
An intensive examination of the American experience since World War II. The course will highlight America's emergence as a "superpower" and its expanding role in the world; the movements of the 1950s and 1960s to expand the civil rights of women and minorities in our society; the growth of the federal government in the postwar era and critiques of that expansion; and the cultural experience of the United States since World War II, with particular emphasis on the shocks of the 1950s and 1960s. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HS 219. 3 semester hours*

HIST 262 The History of England from 55 B.C. to 1688 *(HUMD)*
One of two related courses (with HIST 263), which may be taken in either order. These courses survey the history of England from Roman Britain to the present. Emphasis is on the development of uniquely English institutions as well as political, legal, social, intellectual, imperial, and economic history. They offer the student the opportunity to understand the history of a country that has had a unique and lasting impact on American history and culture. HIST 262 is an inquiry into the history of England from Roman Britain until the advent of the Glorious Revolution in 1688. Several themes will be highlighted, including the formation of the English nation, conversion to Christianity, the development of the Church as a distinctive national institution, feudalism, political centralization, the effects of the Renaissance and Reformation, overseas expansion, and the achievement by 1689 of responsible parliamentary government. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HS 225. 3 semester hours*

HIST 263 The History of England from 1688 to the Present *(HUMD)*
One of two related courses (with HIST 262), which may be taken in either order. These courses survey the history of England from Roman Britain to the present. Emphasis is on the development of uniquely English institutions, as well as political, legal, social, intellectual, imperial, and economic history. It offers the student the opportunity to understand the history of a country that has had a unique and lasting impact on American history and culture. HIST 263 is a survey of the history to Great Britain from the Glorious Revolution through the early 1980s. The course will trace several themes, including the change from a premodern to a modern society, the rise and fall of the British Empire, the development of cabinet government and limitations upon the power of the monarchy, the emergence of an identifiable working class as well as the industrial revolution, mass culture, the Irish Question, and the question of Britain's decline overall in the 20th century. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HS 226. 3 semester hours*

HIST 265 African History to 1800 *(HUMD[M])*
One of two related courses (with HIST 266), which may be taken in either order. This course examines African history from early times until the end of the Atlantic slave trade with special attention paid to the political, social, and economic sectors of pre-colonial Africa. Topics for discussion include the origin of humankind; the development and expansion of early large states across Africa; and the establishment of early trade networks among Africa, Europe, and the Arab world. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HS 229. 3 semester hours*

HIST 266 African History from 1800 *(HUMD[M])*
One of two related courses (with HIST 265), which may be taken in either order. This course examines African history from 1800 to the present. It also includes studies of African societies in the first half of the 19th century; the impact of "New Imperialism" and the scramble for Africa by Europeans at the end of the century; colonial states and societies; African nationalist and independent movements; the impact of decolonization; and Africa in the modern world. Additional case studies focus on individual areas such as South Africa and Nigeria. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HS 230. 3 semester hours*

HLTH—Health

HLTH 100 Principles of Healthier Living *(HLHF)* **CE-R and T**
A study of current health issues focused on information for making prudent personal health decisions. Course explores lifestyle wellness and preventive medicine concepts and practices. Includes mental, social, sexual, physical, and environmental health topics. *Assessment levels: ENGL 101/101A, READ 120. One hour each week. Formerly HE 100. 1 semester hour*

HLTH 105 Personal and Community Health *(HLHF)*
The meaning and significance of physical, mental, and social health as related to the individual and to society; important phases of national health problems; constructive methods of promoting the health of the individual and the community; health problems of college students and young people. *Assessment level: ENGL 101/101A. Three hours each week. Formerly HE 101. 3 semester hours*

HLTH 113 First Aid and CPR *(HLHF)*
Theory and practical application of standard and advanced techniques of first aid and cardiopulmonary resuscitation (CPR). Students will learn how to recognize the signs and symptoms of injuries and sudden illness, how to recognize a life-threatening emergency, how to provide basic life support, and what to do in the case of an airway obstruction or choking. Students will gain the necessary skills for the administration of CPR to adults, children and infants, and learn how to use an automated external defibrillator (AED). Information on how to deal with emergencies like shock, burns, strokes, seizures, and other medical emergencies will be covered. Course consists of lecture, discussions, demonstrations, safety education, and practical work as suggested by OSHA, the American Red Cross, National Safety Council, American Academy of Orthopedic Surgeons, and/or American Heart Association. Upon successful completion of the course, students will receive nationally recognized First Aid and CPR course completion cards. *Assessment levels: ENGL 101/101A, READ 120. Two hours each week. Formerly HE 107. 2 semester hours*

HLTH 121 Nutrition for Fitness and Wellness *(HLHF)*
This course provides an overview of the basic principles of nutrition and weight management with particular application to fitness and sport. The focus is on optimal wellness and, hence, disease prevention. Nutritional and body composition guidelines will be critically examined in order to personalize them for the individual, as well as for high-level participants in a variety of sporting activities. *Assessment level: ENGL 101/101A. Three hours each week. Formerly HE 108. 3 semester hours*

HLTH 125 Personalized Health Fitness *(HLHF)*
This course is designed to assist students in the development of a lifelong commitment to a wellness lifestyle with emphasis on regular participation in health-related fitness activities. Core concepts, methods, and behavior management techniques related to the development and maintenance of fitness, nutrition and weight management, managing stress, and reducing risks associated with various lifestyle-related diseases will be examined, assessed, and evaluated. Students will develop and implement a comprehensive fitness and wellness plan to achieve a healthier lifestyle. The course includes participation in instructional exercise sessions, with additional opportunities for students to utilize the fitness facilities beyond the scheduled class times. *Assessment levels: ENGL 101/101A, RD 120. Three hours each week. Formerly HE 109. 3 semester hours*

HLTH 131 Drugs and Lifestyle Wellness *(HLHF)*
This course is an overview of the cultural drug phenomenon and its impact on the individual's quality of life. Content includes physiological and psychological effects of the use and abuse of street, over-the-counter, prescription, and other recreational drug substances. Wellness lifestyle strategies will be examined as methods to avoid all types of chemical dependency. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HE 111. 3 semester hours*

HLTH 150 Fitness and Nutrition for Weight Management *(HLHF)*
Focuses on the various components of weight management and strategies for a healthier lifestyle. Topics include an examination of nutrition fundamentals, the impact of physical activity on weight management, and analysis of various weight loss programs. The physiological, sociological, and psychological aspects of weight management will be addressed. Students will complete a lifestyle and nutritional analysis, develop nutritionally sound dietary plans, and participate in a specialized exercise program tailored to address their personalized weight management goals. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HE 150. 3 semester hours*

HLTH 160 The Science and Theory of Health *(HLHF)* (R only)
Introduction to the diverse health education and wellness education fields for students preparing to enter the profession. The areas analyzed are historical foundations, philosophy and principles of health education, and professional opportunities. *Assessment level: ENGL 101/101A. Three hours each week. Formerly HE 120.* *3 semester hours*

HLTH 170 Introduction to Aging *(HLHF)* (R only)
An introduction to the study of the aging process. Personal and societal myths about the aged and the aging process will be confronted through examination of biological, social and psychological factors. Issues of race, living environment, long-term care and health policy, as they impact quality of life for the elderly, will also be addressed. *Assessment level: ENGL 101/101A. Three hours each week. Formerly HE 130.*
3 semester hours

HLTH 200 Health Issues in Human Sexuality *(HLHF)*
The objective of this course is to provide students with an introduction to the health issues of human sexuality, including, but not limited to, reproduction and contraception, sexually transmitted diseases, health issues for special populations, and sexual health through the life span. In this course we will provide students with information that will empower them to make responsible and appropriate decisions regarding their sexual behavior. This course will focus on the health aspects of sexual behavior. We will also draw on the disciplines of sociology, psychology, and anthropology. Sexuality is a multifaceted and interdisciplinary topic; however, emphasis in this course is on health issues from a healthy lifestyle perspective. Students interested in exploring the psychological nature of sexuality are encouraged to enroll in PSYC 206 Psychology of Human Sexuality. *Assessment level: ENGL 101/101A. Three hours each week. Formerly HE 112.*
3 semester hours

HLTH 205 Health and Fitness for Teachers *(HLHF)*
Focuses on aspects of health and physical education critical both to personal wellness and to professional practice. Course topics include learning environment applications: health information, physical activity, self-assessment, health action planning, and disease prevention. This course meets the Health and Physical Education outcomes requirements for the A.A.T. *Assessment level: ENGL 101/101A. Three hours each week. Formerly HE 201.*
3 semester hours

HLTH 212 Controlling Stress and Tension *(HLHF)*
A basic understanding of the stress response and how stress affects the body will be the focus of this course. Students will complete self-assessment and initiate personal planning for improving areas of nutrition, rest, exercise, rational thinking, effective communication, emotional health, mind-body connection, and high-level wellness. Methods for controlling stress through relaxation will provide theory and practice in meditation, neuromuscular relaxation, selective awareness, yoga, and biofeedback. *Assessment level: ENGL 101/101A. Three hours each week. Formerly HE 202.* *3 semester hours*

HLTH 215 Women's Health *(HLHF[M])*
Course provides an introduction to women's health issues. Course topics include reproduction, contraception, body image, heart disease, and cancer. Also addressed are mental health, addiction, sexual harassment, violence, and issues pertaining to the health of minority women. *Assessment level: ENGL 101/101A. Three hours each week. Formerly HE 204.*
3 semester hours

HLTH 220 Emergency Medical Responder *(HLHF)*
Provides a comprehensive study of emergency care principles and procedures. Course includes CPR and Automated External Defibrillator; aids to resuscitation and oxygen administration; management of bleeding and injuries; and care of special patients, including obstetric, pediatric, and elderly. Course is designed for individuals who are likely to be the first responders to an accident or emergency scene, such as teachers, security personnel, health care providers, personal trainers, etc. Students must pass all competency exams with a score of 70% or better and achieve an overall course grade of C or better to receive First Responder and CPR for the Professional Rescuer certifications. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HE 205.* *3 semester hours*

HLTH 225 Introduction to Health Behaviors *(HLHF)* (R only)
Introduction to the relationship between psychology and health. This course will investigate the interdependent relationship between an individual's or group's behavior and health/wellness. *Assessment level: ENGL 101/101A. Three hours each week. Formerly HE 200.* *3 semester hours*

HLTH 230 Health in the Later Years *(HLHF)* (R only)
The purpose of this course is to familiarize the student with normal age-related changes in human body systems. The course will also explore acute/chronic illness, mental health/illness, and medication use. Acquisition and maintenance of good health for the older adult will be discussed in terms of nutrition, physical activity, sexual function, and appropriate use of the health care system. *Assessment level: ENGL 101/101A. Three hours each week. Formerly HE 230.* *3 semester hours*

HLTH 250 Emergency Medical Responder Refresher (R and TP/SS only)
Refresher course for those who possess current Emergency Medical Responder and Healthcare Provider or Professional Rescuer CPR certifications. Students must pass competency exams with a score of 70% or better to receive Emergency Medical Responder and Healthcare Provider CPR certifications. PREREQUISITES: *Current Emergency Medical Responder and Healthcare Provider or Professional Rescuer CPR certifications and consent of department. Assessment levels: ENGL 101/101A, READ 120. One hour each week. Formerly HE 290.* *1 semester hour*

HMGT—Hospitality Management

HMGT 100 Customer Service in the Hospitality Industry (R only)
An examination of the role of customer service for lodging and food service operations, large and small. Course stresses understanding customer wants and needs, interaction with customers, customer service support, handling difficult situations, and building long-term relationships with customers. *Assessment levels: ENGL 101/101A, READ 120. One hour each week. Formerly HM 100.* *1 semester hour*

HMGT 101 Introduction to the Hospitality Industry (R only)
Introduction to the hospitality field including the historical development, opportunities and challenges, current trends, and regulations governing the industry. Analysis of functions performed at the three levels of organization within the hotel-institutional organization and the role of domestic and international chains. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HM 101.* *3 semester hours*

HMGT 105 Food Service Sanitation (R only)
This course meets the 15 clock hours plus test required by the Maryland State Department of Health and Mental Hygiene. Topics include foodborne diseases, importance of employee personal hygiene and habits, and approved procedures for handling utensils and equipment. *One hour each week. Formerly FM 105.* *1 semester hour*

HMGT 107 Food and Beverage Management
Study of volume of food and beverage setup and service management. Analysis of quantity food operations, menu construction, raw material estimates, food storage facilities, and related use of institutional food and beverage service equipment. Emphasis on various types of table setup and service as required for different functions. *Assessment levels: ENGL 001, AELR 930/READ 099. Two hours lecture, two hours laboratory each week. Formerly FM 107.* *3 semester hours*

HMGT 110 Principles of Food Production— Lecture (R only)
The study of basic principles of cookery, standardization of recipes, and production techniques. COREQUISITE: *HMGT 111. Two hours each week. Formerly FM 110.* *2 semester hours*

HMGT 111 Principles of Food Production— Laboratory (R only)
Production, presentation, and evaluation of foods as related to commercial kitchens. COREQUISITE: *HMGT 110. Four hours laboratory each week. Formerly FM 111.* *2 semester hours*

HMGT 143 Management of Front Office Operations (R only)
A study of methods and procedures used by managers of front office operations. Review and analysis of the guest cycle, maintaining proper guest records, including registration, cashiering, reservations, credit accounting, and auditing. Review of personnel requirements, including job duties and responsibilities of staff and managers. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HM 143.* *3 semester hours*

HMGT 201 Lodging and Food Service Law (R only)
History of laws governing innkeeping from early times to present; host responsibilities to guest and guest to innkeeper; protection of guest's health, life, and safety; theories of innkeeper's liability for negligence, evictions, crimes, dangers, and accidents; lien rights; equitable charges; house rules and regulations. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HM 201.* *3 semester hours*

HMGT 204 Catering and Banquets (R only)
Study of the planning and operation of catering facilities in hotels and as an independent business. Includes preparation, presentation, and service of food for catered events. PREREQUISITES: *HMGT 110 and HMGT 111 or consent of department. Two hours lecture, three hours laboratory each week. Formerly FM 204.* *3 semester hours*

HMGT 207 Legal Issues in Labor Management *(also listed as MGMT 225. Credit cannot be received for both HMGT 207 and MGMT 225)*
Introduction to the legal implications of employer/employee relations. Topics include a brief history of the labor movement in the United States, the major acts establishing the framework for labor/management relations, union negotiations, procedures and contracts, and the economic impact of unionization. Discrimination in employment, Title VII and its implications in hiring, firing, and working conditions, as well as other statutes and regulations affecting employment relations. PREREQUISITE: *HMGT 211, MGMT 207 or consent of department. Three hours each week. Formerly HM 207.* *3 semester hours*

HMGT 208 Food and Beverage Cost Controls (R only)
Emphasis on additional food and beverage service dealing with problem areas stressing personnel aspects. On-the-job personnel placement, control, supervision, and training. Analysis of cost control elements and budgeting implications. PREREQUISITE: *HMGT 107 or consent of department. Two hours lecture, two hours laboratory each week. Formerly FM 208.* *3 semester hours*

HMGT 211 Supervision and Leadership in the Hospitality Industry (R only)
An examination of the management/supervision/leadership responsibilities in the typical lodging and/or food service establishment. Course stresses leadership, communication, morale, motivation, training, team building, and employee development and retention unique to lodging and food service operations. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HM 121.* *3 semester hours*

HMGT 212 Managing Hospitality Human Resources (R only)
An examination of the managerial human resources function of the typical lodging and/or food service operation. Topics include job analysis and job design, planning, recruiting, hiring, orientation, training, and evaluating personnel. Staff turnover, discipline, exit interviews, compensation and benefit plans will also be discussed. PREREQUISITE: *HMGT 121 or consent of department. Three hours each week. Formerly HM 212.* *3 semester hours*

HMGT 220 Property Security and Facilities Management
An examination of the security, housekeeping, and maintenance functions of lodging and food service operations. Property security will review the necessity for security and how programs are implemented. Housekeeping focuses on the importance of cleanliness in attracting and retaining guests. Maintenance operations for a lodging or food service property include discussion of preventive maintenance programs, HVAC systems, water systems, electrical systems, elevator and escalator upkeep and repair, waste removal, and emergency procedures. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HM 220.* *3 semester hours*

HMGT 240 Lodging and Food Service Sales and Advertising (R only)
Concepts of publicity, communications, public recognition, and goodwill. Stresses methods of developing advertising, merchandising, and profitable use of the media. Attention to the use of convention and group sales, catering, and banquet sales and the importance of promotion in general to build an attractive public image. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HM 240.* *3 semester hours*

HMGT 250 Meeting, Conference, and Event Planning
The growing field of meeting and event planning is discussed in detail. Starting with an overview of the nature of meetings and why people meet, the course will look at a variety of topics, including site selection, contract negotiating, program planning, budgeting and financial management, food and beverage arrangements, and contracted services. A review of the meeting and event planner's job description is also provided. PREREQUISITE: *HMGT 240 or consent of department. Three hours each week. Formerly HM 250.* *3 semester hours*

HMGT 290 Hospitality Practicum (R only)
In-service training and practical experience, totaling a minimum of 120 hours in an approved hospitality operation, lodging, commercial food service, institutional food service, meeting planning, or the related travel and tourism field. Requires a minimum of 10 hours of seminars with case study analysis. PREREQUISITE: *Consent of department. Formerly HM 210.* *3 semester hours*

HONR—Honors Program

Honors offerings include seminars, honors sections of existing courses, independent study/tutorials, honors modules, and thread courses. Each campus will have somewhat different honors offerings each semester. These offerings will be noted in the current schedule of classes.
The prerequisites for all HONR courses are completion of at least 12 college credits, at least a 3.2 grade point average, and ENGL 101 or ENGL 101A with a grade of A or B. Some HONR courses have additional prerequisites, which are noted in the course descriptions.

HONR 101 Fundamental Concepts of Inquiry in Literature and the Arts
Selected themes and topics in literature and the arts will be used to help students develop a better understanding of the concepts, terminology, and methodology of the study of literature and the arts. Students may take this course twice to fulfill the requirements of the Honors Scholar Program, provided each time it is taken, a different topic is covered. Specific information about each section of this course will be published prior to the start of each registration and may be obtained from the campus honors coordinator. *Formerly HP 101.*
1 semester hour

HONR 105 Fundamental Concepts of Inquiry in the Natural Sciences and Mathematics
Selected themes and topics in the natural sciences and mathematics will be used to help students develop a better understanding of the concepts, terminology, and methodology of the study of natural sciences and mathematics. Students may take this course twice to fulfill the requirements of the Honors Scholar Program, provided each time it is taken, a different topic is covered. Specific information about each section of this course will be published prior to the start of each registration and may be obtained from the campus honors coordinator. *Formerly HP 102.* *1 semester hour*

HONR 110 Fundamental Concepts of Inquiry in Culture and History
Selected themes and topics in culture and history will be used to help students develop a better understanding of the concepts, terminology, and methodology of the study of culture and history. Students may take this course twice to fulfill the requirements of the Honors Scholar Program, provided each time it is taken, a different topic is covered. Specific information will be published prior to the start of each registration and may be obtained from the campus honors coordinator. *Formerly HP 103.* *1 semester hour*

HONR 114 Fundamental Concepts of Inquiry in the Behavioral and Social Sciences
Selected themes and topics in the behavioral and social sciences will be used to help students develop a better understanding of the concepts, terminology, and methodology of the study of behavioral and social sciences. Students may take this course twice to fulfill the requirements of the Honors Scholar Program, provided each time it is taken, a different topic is covered. Specific information about each section of this course will be published prior to the start of each registration and may be obtained from the campus honors coordinator. *Formerly HP 104.* *1 semester hour*

HONR 251 Independent Study—Tutorial in the Humanities
This tutorial emphasizes independent study in areas not listed among the credit courses in the humanities. Appropriate faculty tutor individual students in specific studies: e.g., philosophy, the problem of knowledge; literature, a comparative study of literary utopias; art, a project in oil painting; and language, Schiller and Goethe. Students may repeat this course provided that each time it is taken, a different topic is covered. *Formerly HP 251.*
3 semester hours

HONR 258 Tutorial in Science
This tutorial emphasizes independent study in areas not listed among the other credit courses in the natural sciences. Appropriate science faculty tutor individual students. This tutorial instruction provides background material for a number of research experiments. Students may repeat this course provided that each time it is taken, a different topic is covered. PREREQUISITE: *Consent of instructor. Formerly HP 258.* *3 semester hours*

HONR 260 Independent Study—Tutorial in the Social Sciences
This tutorial emphasizes independent study in areas not listed among the other credit courses in the social sciences. Appropriate social sciences faculty tutor individual students in specific studies. Students may repeat this course provided that each time it is taken, a different topic is covered. *Formerly HP 260.* *3 semester hours*

HONR 264 Greco-Roman Culture (R only)
An analysis of the major intellectual elements of the Mediterranean world between 800 B.C. and 300 A.D. Emphasis on period literature to determine political, philosophical, and artistic levels of Athens and Rome. Concentration on seminar discussions of plays, political and philosophical treatises, and art styles. *Formerly HP 264.*
3 semester hours

HONR 265 Independent Study—Tutorial in Mathematics/Computer Science
This tutorial emphasizes independent studies in areas not listed among the credit courses in mathematics. Appropriate mathematics/computer science faculty tutor individual students in specific studies, e.g., in computer science, the study and comparison of modern programming languages; in mathematics, topology, complex analysis, abstract algebra, and logic. Students may repeat this course provided that each time it is taken, a different topic is covered. *Formerly HP 261.*
3 semester hours

HONR 270 Study-Travel Seminar
This travel-study experience offers academic, aesthetic, and cultural opportunities within the USA or abroad to honor students. The course includes pre- and post-trip advising, on-site orientation sessions, and directed readings. Grades are based on Montgomery College faculty evaluation of student portfolios, and Montgomery College credit is awarded. Transportation, tuition, room and board and other costs are in addition to Montgomery College tuition. PREREQUISITES: *Completion of at least 12 college credits, a 3.2 grade point average or higher, a grade of A or B in ENGL 101 or ENGL 101A, and consent of campus honors coordinator or honors program director. Formerly HP 270.* *3 semester hours*

Courses designated with an M after the name fulfill the General Education global and cultural perspectives requirement.
Common course outcomes for most courses can be found online at www.montgomerycollege.edu/courses.

HONR 275 Honors Internship
Available through the Honors Program in partnership with other programs, for example the Paul Peck Humanities Institute and the Women's Studies Program. Internships are offered at museums, archives, historic and cultural organizations as well as college based programs, such as the Potomac Review literary journal. PREREQUISITE: *Permission of instructor. Formerly HP 275.*
3 semester hours

HONR 280 Capstone: Research in Disciplines
Encourages students to explore a theme in their chosen discipline. Through a variety of activities and assignments, this course helps to improve students' skills in textual analysis, critical thinking, research, discussion, presentation and academic writing. Enrolled students, from diverse disciplines, will undertake and complete a mentor-approved academic project that may also be explored in the context of an interdisciplinary discussion. PRE-or COREQUISITE: *ENGL 102 or ENGL 103 and consent of campus honors coordinator or honors program director. Three hours each week. Formerly HP 280.* *3 semester hours*

HSCI—Health Sciences

HSCI 101 Introduction to Health Sciences
Course is designed to give students interested in allied health careers the opportunity to explore the basic concepts surrounding professions related to this field. Instruction includes an introduction to: anatomy and physiology, medical terminology, medical ethics, communications, and application of professional practices to both hospital and prehospital environments. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly HC 101.* *3 semester hours*

IDES—Interior Design

IDES 101 Interior Design I (R only) **CE**
An introduction to the relationship of people to their environment and the design process necessary to create functional aesthetic interior space. The study of design theory using conceptual problem-solving methods. Emphasis on the basic elements and principles of design and use of drafting instruments required to translate design concepts into completed projects. *Two hours lecture, four hours studio each week. Formerly ID 101.*
3 semester hours

IDES 107 Interiors: Design Principles (R only) **CE**
Introduces design elements, including color, space, texture, line, lighting, sound, and form in two- and three-dimensional spaces. Topics include principles and design theory, as related to environmental applications. Two-dimensional studies include applications in elevations and plans; three-dimensional studies include applications in interiors models. *Two hours lecture/discussion, four hours studio each week. Formerly ID 103.*
3 semester hours

IDES 110 Interiors: Technical Drawing and Drafting (R only) **CE**
Introduces basic drawing and drafting techniques, employed as the foundation for all graphic communications for interior designers. Three-dimensional and two-dimensional drawings, as well as freehand sketching, are incorporated in weekly projects and assignments. *Two hours lecture/discussion, four hours studio each week. Formerly ID 105.*
3 semester hours

IDES 111 Interior Design II (R only) **CE**
A continuation of IDES 107, with emphasis on creating design solutions for both residential and nonresidential spaces. Projects will be more complex. Students will utilize appropriate scale, color, materials, furniture, form, and light to define and solve major interior space problems and design objectives in an organized method. PREREQUISITES: *IDES 101, IDES 107, IDES 110 or consent of interior design coordinator. Two hours lecture, four hours studio each week. Formerly ID 104.*
3 semester hours

IDES 116 Interiors: Advanced Presentation Techniques (R only)
The techniques of rendering the elements of an interior space and accessories in detail, including the representation of light, texture, and color using various media. PREREQUISITES: *IDES 101 and IDES 110 or consent of interior design coordinator. Two hours lecture, four hours studio each week. Formerly ID 106.*
3 semester hours

IDES 120 Interiors: Computer Presentation Techniques (R only)
An introduction to computer-aided interior design drafting techniques, with emphasis on two-dimensional applications, such as floor and reflected ceiling plans, interior elevations, furniture and equipment. Skills will include plotting, storing, modifying, and producing drawings. PREREQUISITES: *IDES 101 and either IDES 110 or ARCH 103, or consent of interior design coordinator. Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Two hours lecture, four hours laboratory each week. Formerly ID 180.*
3 semester hours

IDES 211 Historic Interiors I *(ARTD)* (R only)
One of two related courses (with IDES 212), which may be taken in either order. Studies the development of interior decoration and domestic spaces from early Egyptian through 21st century European and American. Analyzes period design referenced to historical, geographical, and cultural influences. Explores the development of furniture, textile, wall, window, floor, ceiling treatments, and related interior accessories. IDES 211 primarily covers the earliest periods and European styles. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly ID 211.* *3 semester hours*

IDES 212 Historic Interiors II *(ARTD)* (R only)
One of two related courses (with IDES 211), which may be taken in either order. Studies the development of interior decoration and domestic spaces from early Egyptian through 21st century European and American. Analyzes period design referenced to historical, geographical, and cultural influences. Explores the development of furniture, textile, wall, window, floor, ceiling treatments, and related interior accessories. IDES 212 primarily covers American styles and 17th through 20th century styles. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly ID 212.*
3 semester hours

IDES 221 Interior Design: Residential (R only)
To develop the student's concepts and ideas by designing the interior spaces of an apartment and house. Analysis of aesthetics of style, function, and space culminating in finished perspective rendering in color, floor plan, sample boards, and cost estimates. PREREQUISITES: *IDES 111 and IDES 116. Two hours lecture/discussion, four hours studio each week. Formerly ID 221.* *3 semester hours*

IDES 222 Interior Design: Commercial/ Contract (R only)
The design and planning of public interiors and commercial spaces such as offices, stores and/or showrooms. Students learn to analyze and organize the elements of interior design and cost estimates, including the role of function and structure in space planning and lighting. Focus is on interiors systems, technical project presentations, codes and teamwork. PREREQUISITES: *IDES 111, IDES 116, IDES 120 or ARCH 183. Two hours lecture, four hours studio each week. Formerly ID 222.*
3 semester hours

IDES 234 Textiles (R only)
An introduction to textiles and materials used for interior applications and their historical development. Fibers, weaves, textures, piles, dyes, printing, finishes, codes, environmental issues and scientific testing will be studied. Field trips required. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture, two hours laboratory/studio each week. Formerly ID 234.* *3 semester hours*

IDES 243 Kitchen Design (R only)
The design of kitchens using National Kitchen and Bath Association (NKBA) guidelines and graphic standards. Mechanical, electrical, and plumbing requirements are analyzed and incorporated into design. Students must demonstrate drafting skills and knowledge of space planning and design or meet prerequisites. PREREQUISITES: *IDES 101 and IDES 110 or consent of interior design coordinator. One hour lecture, one hour laboratory each week. Formerly ID 243.* *1 semester hour*

IDES 244 Bath Design (R only)
The design of baths using National Kitchen and Bath Association (NKBA) guidelines and graphic standards. Mechanical, electrical, and plumbing requirements are analyzed and incorporated into design. Students must demonstrate drafting skills and knowledge of space planning and design or meet prerequisites. PREREQUISITES: *IDES 101 and IDES 110 or consent of interior design coordinator. One hour lecture, one hour laboratory each week. Formerly ID 244.* *1 semester hour*

IDES 245 Kitchen and Bath Appliances and Equipment (R only)
An introduction to the selection, specification, and installation of appliances and equipment used in residential and commercial kitchens and baths. Hands-on demonstrations of appliances and equipment will be provided by representatives, vendors, and contract specialists. PREREQUISITE: *IDES 101 or IDES 110 or consent of interior design adviser. Assessment level: AELR 930/READ 099. Field trip(s) required. One hour lecture/discussion; one hour laboratory each week. Formerly ID 245. 1 semester hour*

IDES 246 Interior Systems (R only)
An introduction to the selection and installation of interior kitchen and bath systems including plumbing, ventilation, and electrical. Projects are examined and options and solutions explored using National Kitchen and Bath Association (NKBA) guidelines. PREREQUISITES: *IDES 111 or IDES 120, or consent of interior design coordinator. One hour each week. Formerly ID 246. 1 semester hour*

IDES 247 Codes for Interiors (R only)
An introduction to issues related to codes and building requirements for furniture, finishes, systems, accessibility, and installations in the interior environment. Students examine standards, codes, National Kitchen and Bath Association (NKBA) guidelines, resources, and local code procedures. Students analyze sample projects and resolve issues related to codes and specify accordingly. PREREQUISITE: *IDES 101 or IDES 110 or consent of interior design coordinator. Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. One hour each week. Formerly ID 247.* *1 semester hour*

IDES 248 Interior Materials and Finishes (R only)
An examination of the characteristics, use, specification, and installation of current materials and finishes applied to interior walls, floors, furniture, and cabinetry. Materials and finishes explored will include woods, metals, plastics, ceramics, and natural products. Product manufacturer's representatives will provide in-class product demonstrations. *One hour each week. Formerly ID 248.* *1 semester hour*

IDES 249 Interiors: Green Design (R only)
An introduction to conservation and sustainability issues, as related to building and interiors materials. Socially responsible choices for the creation of interior designs, with materials and finishes that support "green design," based on research and readings, will be examined. *Assessment levels: EL 104/ENGL 002, MATH 093/096, AELR 930/READ 099. One hour each week; may require field trips. Formerly ID 249.* *1 semester hour*

IDES 250 Lighting Design (R only)
Intensive technical instruction in the principles of lighting design: light source and fixture selection, fixture specification, and installation. Real projects will be examined and possible solutions explored in order to determine appropriate decisions relative to product selection, placement, and electrical requirements. Drafting proficiency will be applied to exercises or assignments. PREREQUISITES: *IDES 101 and IDES 110 or consent of interior design adviser. Assessment levels: ENGL 002/ AELW 940, AELR 930/READ 099. One hour each week. Formerly ID 250.* *1 semester hour*

IDES 254 Furniture Production (R only)
An introduction to working with a manufacturer, craftsperson, or product representative to produce a custom product. The product may be a drawing or a model or other method of presentation. Possible field trip. PREREQUISITE: *IDES 101 and IDES 110 or consent of interior design coordinator. Assessment levels: AELW 940/ENGL 002, MATH 093/096, AELR 930/READ 099. One hour lecture, one hour laboratory/ studio each week. Formerly ID 254.*
1 semester hour

IDES 255 Accessible Design (R only)
Designed to provide students with technical instruction about accessible design theory and the specification and installation of ADA-approved finishes and products. Real projects are examined and solutions explored, resulting in appropriate decisions, relative to design and product selection and placement. PREREQUISITES: *IDES 101 and IDES 110, or consent of interior design coordinator. Assessment levels: AELW 940/ENGL 002, AELR 930/ READ 099. One hour each week. Formerly ID 255.*
1 semester hour

IDES 256 Government Contracts (R only)
A study of selection, specification writing, and proposal writing for government interior design contract projects, including all phases of the proposal process. Projects, study solutions, and draft portions of sample proposals will be examined. Principles of drafting will be applied to exercises or assignments. CAD experience beneficial. PREREQUISITES: *IDES 110 and IDES 111, or consent of interior design coordinator. Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. One hour each week. Formerly ID 256.* *1 semester hour*

IDES 262 Interiors: Professional Experience (R only) **CE**
Provides work experience and field study on an actual project related to the student's curriculum. Each student drafts a comprehensive record of the work experience and discusses it with the interior design adviser. Each student submits a descriptive paper, documenting the learning outcomes and benefits of the work, as related to the career goals and program objectives. Students may receive credit by examination for work experience, as demonstrated by examination, portfolio review, resume, and employer recommendations. PREREQUISITE: *Consent of interior design coordinator or department. Minimum of 50 hours of work experience required per semester hour. Students may not accumulate more than 3 semester hours. Formerly ID 262.* *1–3 semester hours*

IDES 265 Projects in Interior Design (R only)
Designed to provide students with intensive technical instruction related to the expertise of each guest speaker. Expertise of individual speaker will determine activities and exercises. Field trips may be required. *Assessment levels: AELW 940/ENGL 002, MATH 093/096, AELR 930/READ 099. One hour each week. Formerly ID 263.* *1 semester hour*

IDES 270 Portfolio review and Preparation (R only)
Selection and preparation of portfolio materials and review of portfolios for professionals, graduates, and current students. Portfolios are developed for college articulation and employment in commercial and residential design, kitchen and bath design, lighting design, and other design specialties. PREREQUSIITE: *IDES 111 or consent of interior design coordinator. One hour each week. Formerly ID 264.* *1 semester hour*

IDES 272 Business Practices and Procedures for Interior Design (R only)
The student will be exposed to the professional and business essentials necessary to conduct a successful interior design practice. Client-designer relationships, contracts, fees, and office management are covered. *Assessment level: ENGL 101/101A. Three hours each week. Formerly ID 260.*
3 semester hours

IDES 275 Interiors: Professional Practicum/Internship (R only)
Provides work experience and field study on an actual project related to the student's curriculum. Each student drafts a comprehensive record of the work experience and discusses it with the interior design adviser. Each student submits a descriptive paper, documenting the learning outcomes and benefits of the work, as related to the career goals and program objectives. Participation supervised by the instructor and appropriate personnel at work. PREREQUISITE: *Consent of interior design coordinator or department. Minimum of 55 hours of work experience required per semester hour. Student may not accumulate more than 3 semester hours. Formerly ID 261.* *1–3 semester hours*

IDES 280 Interiors: Independent Study/Research (R only)
Provides independent research and study in an area not listed among the credit courses in interior design. Individual students are tutored in specific areas (e.g., study of psychological or sociological implications of spatial interpretations); students research and record data related to a selected topic of interior design. The course culminates in the production of a research paper. Students may repeat this course to advance the previous topic or for a different topic. PREREQUISITE: *Consent of interior design coordinator or department. Minimum of 50 hours of work experience required per semester hour. Students may not accumulate more than 3 semester hours combined for IDES 280 and IDES 285. Formerly ID 281.* *1–3 semester hours*

IDES 285 Interiors: Advanced Independent Project (R only)
Provides independent research and study in an area not listed among the credit courses in interior design. Individual students are tutored in specific areas (e.g., study of psychological or sociological implications of spatial interpretations); students research and produce a project related to a selected topic of interior design, which culminates in the production of a design project or product. Students may repeat this course provided that each time it is taken, a different project is produced, for a maximum of 3 semester hours. PREREQUISITE: *Consent of interior design coordinator or department. Minimum of 50 hours of work experience required per semester hour. Students may not accumulate more than 3 semester hours combined for IDES 280 and IDES 285. Formerly ID 282.*
1–3 *semester hours*

ISTD—Interdisciplinary Studies

ISTD 140 Foundations of Entrepreneurship
Multi-disciplinary study designed to introduce students to the basic business, strategy, and leadership skills needed to launch and manage new ventures. Topics include learning how to assess the feasibility of a new venture, as well as how to apply best practices for planning, launching, and managing new companies. Students discuss a wide range of issues of importance and concern to entrepreneurs and learn to recognize opportunities, assess the skills and talents of successful entrepreneurs, and learn models and "rules of thumb" that help them navigate uncertainly. The opportunities and challenges of entrepreneurship are explored, as is the ability to use entrepreneurial skill sets in a corporate environment. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly IS 140.*
3 semester hours

ISTD 173 Integrated Arts *(ARTD)*
This introductory course explores basics in visual arts, dance, music, and theatre through an exploration of representative works. It also focuses on the relationship of terms and concepts to the perceptual process and on developing both artistic and critical perception. This interdisciplinary studies course meets the integrated arts requirement of the Maryland Higher Education Commission–approved A.A.T. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly IS 273.* *3 semester hours*

ISTD 210 Entrepreneurial Opportunity Analysis and Decision–Making in Technology Ventures
Interdisciplinary studies in the principles of entrepreneurial opportunity analysis and decision-making in an increasingly dynamic and technically-inclines society. Emphasis is placed on how aspiring technology entrepreneurs can develop their entrepreneurial mindset and opportunity recognition capabilities to develop winning entrepreneurial plans for future ventures. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly IS 210.*
3 semester hours

ITAL—Italian

ITAL 099 Functional Spoken Italian
A beginning course in conversational Italian for travelers, students, and professionals, emphasizing pronunciation, comprehension, and the formation of spoken sentence patterns. This course provides a basis for learning and using Italian, emphasizing oral skills (listening and speaking) and limited reading and writing skills. Students are introduced to essential aspects of Italian culture. Course topics may vary. This course does not fulfill language requirements. No previous study of Italian is required. *Three hours each week. Formerly IT 099.* *3 semester hours*

ITAL 101 Elementary Italian I
(HUMD[M])
A beginning language course focusing on the study of Italian language and culture. Students begin to develop the ability to communicate in Italian through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of Italian is required. *In-class work is supplemented by 20 hours in the language learning laboratory. Three hours each week. Formerly IT 101.* *3 semester hours*

ITAL 102 Elementary Italian II
(HUMD[M])
A continuation of ITAL 101. Students continue their study of written language, conversation, and composition as they consider cultural themes, language functions, and authentic situations. PREREQUISITE: *ITAL 101 or consent of department. In-class work is supplemented by 20 hours in the language learning laboratory. Three hours each week. Formerly IT 102.* *3 semester hours*

JAPN—Japanese

JAPN 099 Functional Spoken Japanese
A beginning course in conversational Japanese for travelers, students, and professionals, emphasizing pronunciation, comprehension, and the formation of spoken sentence patterns. This course provides a basis for learning and using Japanese, emphasizing oral skills (listening and speaking) and limited reading and writing (Katakana and Hiragana) skills. Students are introduced to essential aspects of Japanese culture. Course topics may vary. This course does not fulfill language requirements. No previous study of Japanese is required. *Three hours each week. Formerly JN 099.*
3 semester hours

KORA—Korean

KORA 101 Elementary Korean I
(HUMD[M])
A beginning language course focusing on the study of Korean language and culture. Students begin to develop the ability to communicate in Korean through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of Korean is required. *In-class work is supplemented by 20 hours in the language learning laboratory. Three hours each week. Formerly KR 101.* *3 semester hours*

KORA 102 Elementary Korean II
(HUMD[M])
A continuation of KORA 101. Students continue their study of written language, conversation, and composition as they consider cultural themes, language functions, and authentic situations. PREREQUISITE: *KORA 101 or consent of department. In-class work is supplemented by 20 hours in the language learning laboratory. Three hours each week. Formerly KR 102.* *3 semester hours*

LATN—Latin

LATN 101-102 Elementary Latin I and II *(HUMD[M])*

A foundation for reading, writing, and understanding of the Latin language. Each course includes the structure, grammar, syntax, and vocabulary of Latin. Students will read and translate Latin texts. PREREQUISITE: *LATN 101 for LATN 102. Three hours each week. Formerly LT 101–102.*

3-3 semester hours

LGST—Paralegal Studies (Legal Assistant)

LGST 101 Introduction to the Legal System (G and TP/SS only)

A general perspective of the legal system and specific information about the present and potential role of the legal assistant within that system. The following topics will be studied: operation and structures of the federal and Maryland criminal and civil systems, administrative agencies, criminal justice agencies, private law firms, public sector law offices, legal clinics, and prepaid legal plans. The principles of legal ethics will be related to the present and possible future tasks, skills, and roles of the legal assistant in each legal area. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly LA 101.*

3 semester hours

LGST 102 Legal Research (G and TP/SS only)

Focuses on the importance of legal research as a skill that is part of a legal assistant's tools. Explores the principles of an organized approach to legal research, kinds of law books, components of a law book, citations, reading and finding constitutional law, regulations, case law, and statutory law. Students will read and brief statutes and cases. In learning various legal research tools, students will use indexes, digests, Shepard's citators, and treatises to establish authority to support a position. Other sources of research include federal and state codes, reports, and administrative regulations. A brief survey of international and foreign law will also be included. PREREQUISITE: *LGST 101. Three hours lecture/ discussion each week. Formerly LA 102.*

3 semester hours

LGST 103 Legal Writing (G and TP/SS only)

Concentrated study of the language, format, and content of legal writings. Emphasis on the techniques of legal composition, including understanding the role of key facts; narrowing issues; applying relevant law, citations, and other appropriate information; and organizing the materials and writing them in clear, concise style. Practice in applying these techniques to writing interoffice memoranda, letters, and legal instruments. PREREQUISITES: *LGST 101 and evidence of keyboarding skill of 35 wam. Three hours each week. Formerly LA 103.* *3 semester hours*

LGST 104 Interpersonal Communications, Legal Interviewing, and Investigating Techniques (G and TP/SS only)

To increase awareness of the factors underlying effective communication with the legal setting. Skills in interviewing, listening, and investigation will be systematically developed. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly LA 104.* *3 semester hours*

LGST 106 Legal Ethics (G and TP/SS only)

An exploration of fundamentals in ethics as applied to personal and public policy judgments and decisions in legal activities. This course concentrates on moral and ethical issues and decision making as they relate to a legal environment, with a focus on ethical principles as they influence legal policies. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly LA 106.* *3 semester hours*

LGST 122 Law Office Administration
(G and T only)
A study of the principles of law office administration including organizational structures, law office personnel, systems approach, equipment, timekeeping, bookkeeping and accounting practices, indexing and filing, calendar and monitor systems, library and retrieval systems, the office manual, and the law office layout. Students will complete practical problems in several areas. Major emphasis will be on the development and use of systems in the law office, with the expectation of increasing efficiency and reducing legal costs. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly LA 122.*
3 semester hours

LGST 210 Torts (G and TP/SS only)
This course concentrates on civil wrong. Students will become familiar with the standard of conduct required in various transactions and the remedies as a result of the breach of required standards. Students will learn how specific acts interfere with family relationships and business relationships. PREREQUISITE: *LGST 101. Three hours lecture/discussion each week. Formerly LA 210. 3 semester hours*

LGST 211 Maryland Contract Law
(G and TP/SS only)
This course focuses on the common law of contracts and sales. Emphasis is placed on the elements of a contract, the types of sales, and the legal consequences as a result of a contract or sale. Students will become familiar with the negotiation of a contract, creation of a sale, and the interpretation of the relevant laws. Students will be required to draft several contracts and sales agreements according to the laws of Maryland and the Uniform Commercial Code. Includes the paralegal's role in assisting attorneys in contract review. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly LA 110.* *3 semester hours*

LGST 212 Immigration Law
(G and TP/SS only)
An introduction to U.S. immigration laws as applied to personal, corporate, and public policy judgments. This course concentrates on questions of philosophy, public policy, and constitutional interpretation and will develop an awareness of how legislation affects administrative and judicial decisions involving immigration. PREREQUISITE: *LGST 101 or consent of department. Three hours lecture/discussion each week. Formerly LA 212.*
3 semester hours

LGST 214 Domestic Relations
(G and TP/SS only)
A practical course in the law and the practice of domestic relations law in Maryland. Instruction includes a description of the process through which a divorce action flows from the attorney's office through the courts. The special pleadings and documents to be prepared for the courts, the agreements to be drawn between the parties, the grounds for divorce and separation, and the defenses are presented. The property rights of the parties are examined including alimony, custody, and child support. *Assessment levels: ENGL 101/ 101A, READ 120. Three hours lecture/discussion each week. Formerly LA 114.* *3 semester hours*

LGST 216 Real Property
(G and TP/SS only)
Designed to provide students with the basic concepts of real property and to enable them to perform duties relating to real property in a legal office. Students will have practice in drafting and recording the documents related to the transfer of real property title as well as practice in completing a title search under supervision and identifying possible title defects. The student will also have practice in preparing settlement sheets and assembling all the documents necessary for the closing procedure. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly LA 116.* *3 semester hours*

LGST 218 Civil Litigation (G and TP/SS only)
A practical course in the processes through which a civil lawsuit and a criminal prosecution advance from the lowest through the highest courts in Maryland. The instruction includes a description of the Maryland court system, the lawyer's tools, the stages of a lawsuit, and the participation of the legal assistant at every stage of the proceeding in the lawyer's office and in court. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly LA 118. 3 semester hours*

LGST 220 Drafting Wills and Probating Estates in Maryland (G and TP/SS only)
A practical course in the drafting of wills and probating of estates in Maryland. The instruction includes a description of the process through which an estate flows from the attorney's office through the courts. The documents to be prepared for the courts and the mechanics of probating the estate will be covered. Tax consequences will be discussed. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture/discussion each week. Formerly LA 120. 3 semester hours*

LIBR—Library

LIBR 110 Fundamentals of Library Research
An introduction to library organization and resources, including experience in analyzing and using reference books and bibliographic tools. Emphasis will be placed on developing techniques for effective research. *Assessment levels: ENGL 101/101A, READ 120. One hour each week. Formerly LR 110. 1 semester hour*

LING—Linguistics

LING 200 Introduction to Linguistics *(HUMD[M])*
A survey of the core areas of linguistic analysis—phonology, morphology, syntax, semantics, and pragmatics—and of the major areas of study to which linguistic theory can be applied. The latter include psycholinguistics, sociolinguistics, first and second language learning, history of languages, writing systems, and language universals. PREREQUISITE: *A grade of C or better in ENGL 101/101A or consent of department. Three hours each week. Formerly LG 200. 3 semester hours*

LNTP—Landscape Technology

LNTP 100 Introduction to Plant Sciences (NSLD)
This course explores the many facets of plant science and provides students with a strong foundation in the basics of botany and horticulture. Included topics are plant anatomy, morphology, physiology, classification, genetics, and the importance of plants to society. Students will apply learned fundamentals of plant propagation and nutrition during laboratory investigations. Field trips may be required. *Assessment levels: ENGL 101/101A, READ 120. Two hours lecture, two hours laboratory one hour discussion/recitation each week. Formerly LN 100. 4 semester hours*

LNTP 105 Introduction to Landscape Technology (G only)
A general introduction to the horticultural industry including nurseries, landscape establishment and maintenance, interior landscapes, lawn establishment and management, arboriculture, and landscape design. Guest speakers present a general survey of the major fields of the industry as well as potential job opportunities in those fields. Topics include basic concepts in plant growth, morphology, physiology, sexual and asexual plant propagation, plant nutrient requirements, and fertilizer sources. *Two hours each week. Formerly LN 101. 2 semester hours*

LNTP 115 Water Garden Management (G only)
This course, a comprehensive survey directed toward planning, installing, and maintaining water gardens, examines construction materials and techniques. Topics also include the study of aquatic plants—their propagation, culture, and function in the aquatic ecosystem—and the selection and care of ornamental fish and scavengers. *One hour lecture, two hours laboratory each week. Formerly LN 115. 2 semester hours*

LNTP 135 Landscape Technologies for Stormwater Maintenance (G only)
Instruction in how to perform inspection, minor repairs and maintenance of plant materials surrounding bio-retention facilities and similar Low Impact Development (LID) techniques according to Montgomery County and Maryland State guidelines. Other topics include planning reading and developing a maintenance plan for bio-retention facilities. *One half hour lecture, one hour laboratory each week. Formerly LN 135.* *1 semester hour*

LNTP 140 Green Solutions for Parking and Walkways (G only)
Provides an overview of the features, applications, and environmental benefits of using permeable pavers and pavements for green urban design and construction projects. The technology, function, and performance of permeable pavers and pavement are compared to that of conventional dense pavement. Basic installation and design considerations according to Montgomery County and Maryland State guidelines are discussed. One half hour lecture, one hour laboratory each week. *Formerly LN 137.* *1 semester hour*

LNTP 145 Creating Gardens in a Digital Age (G only)
This course introduces students to historical garden designs as well as current ecologically influenced trends, such as sustainable landscaping and native planting designs. Through traditional and digital media, students will learn to apply these influences to create their own designs and to prepare graphic presentations, plant palettes, and price quotes. Three Saturday field trips will look at garden designs that will form the basis of the students' projects. *Assessment level: AELR 930/READ 099. One hour lecture, two hours laboratory each week. Formerly LN 140.* *2 semester hours*

LNTP 150 Introduction to Arboriculture (G only)
Hands-on course teaches the skills and techniques necessary to access the upper parts of large trees; safety when working in and around large trees; and proper selection, use, and maintenance of equipment used in the arboriculture profession. Other topics include selection and care of personal protective equipment. The course is physical in nature. This course has been endorsed by the Maryland Arborist Association. *Assessment level: AELR 930/READ 099. Two hours laboratory each week. Formerly LN 150.* *1 semester hour*

LNTP 161 Landscape Graphics (G only)
This course in landscape design is for beginning students who wish to develop the graphic skills necessary to prepare planting designs and construction drawings for presentations to clients and for construction implementation. Topics include site analysis, conceptual design, schematic design, working drawings, and construction details. Students will prepare colored site plans and basic three-dimensional drawings. *Two hours lecture, two hours laboratory each week. Formerly LN 120.* *3 semester hours*

LNTP 162 Landscape Design (G only)
A continuation of LNTP 161, focusing on the fundamental concepts of landscape design. Students will be introduced to the principles of residential landscape architecture, including planning, form composition, design development, and client presentations. The proper and effective use of plant and landscape materials in developing designs and graphics for both formal and informal landscapes will be emphasized. PREREQUISITE: *LNTP 161 or consent of department. Two hours lecture, two hours laboratory each week. Formerly LN 130.* *3 semester hours*

LNTP 190 Pesticide Use and Safety (G only)
This course prepares the horticultural professional for the examination for pesticide application certification. Course content includes principles of pest control, pesticides, laws and regulations, pesticide labeling, pesticides and human health, personal protective equipment, pesticides and the environment, handling pesticides, pesticide emergencies, and pesticide alternatives. *Two hours each week. Formerly LN 190.* *2 semester hours*

LNTP 204 Landscape Construction Methods and Estimating (G only)
This course is designed to provide an overview of landscape construction detail and design and its importance and value for successful implementation of landscape planning. Course content includes design and site factors, regulations and conventions, construction features and materials, design development, wood and masonry construction, and cost estimating. PREREQUISITE: *LNTP 162 or consent of department. Two hours lecture, two hours laboratory each week. Formerly LN 204.* *3 semester hours*

LNTP 215 Pest Management (G only)
Identification of insects, mites, and other arthropods attacking landscapes, nursery plants, and greenhouse crops. Topics include life cycles of plant-damaging insects/mites and identification of commonly attacked plant materials; integrated pest management control options; pesticide uses and limitations; pesticide safety, equipment, and application methods. *Assessment level: AELR 930/READ 099. Two hours lecture, two hours laboratory each week. Formerly LN 215.* *3 semester hours*

LNTP 222 Turfgrass Management (G only)
Management of turfgrass with respect to residential, commercial, and athletic field lawn care. Emphasis on the use of the newest and most adaptable turfgrass varieties for minimum insect and disease problems. Turfgrass establishment procedures, lawn maintenance schedules, renovation procedures, pest control methods, and weed control options will be covered. Laboratory assignments will include identification of grass species, weeds, and turf insects. *Assessment level: AELR 930/READ 099. Two hours lecture, two hours laboratory each week. Formerly LN 222.* *3 semester hours*

LNTP 244 Herbaceous Plant Materials (G only)
This course, designed to help students make appropriate selections for landscaping situations, identifies and examines herbaceous plant material commonly used in residential and commercial landscaping, with an emphasis on annuals, perennials, and ornamental grasses. *Assessment level: AELR 930/READ 099. Two hours lecture, two hours laboratory each week. Formerly LN 110.* *3 semester hours*

LNTP 253 Plant Materials I (G only)
Identification and uses of deciduous plant material commonly used in the landscape in Maryland and surrounding states for residential and commercial plantings. Emphasis on native and non-native deciduous trees and shrubs. Plant heights, shapes, seasonal interest, flower time, colors, fruiting characteristics, and other landscape characteristics are covered. This course is intended to prepare the student to make appropriate selection of plant materials for particular landscape situations. *Assessment level: AELR 930/READ 099. Two hours lecture, two hours laboratory each week. Formerly LN 108.* *3 semester hours*

LNTP 254 Plant Materials II (G only)
Identification and uses of evergreen plant material commonly used in the landscapes of Maryland and surrounding states. Evergreens with outstanding qualities that are not commonly used and that are recent plant introductions will also be covered. The course will emphasize native and non-native evergreen shrubs, trees, ground covers, and vines. Evergreen plant heights, shapes, colors, seed pod characteristics, and bark patterns will be covered. *Assessment level: AELR 930/READ 099. Two hours lecture, two hours laboratory each week. Formerly LN 109.* *3 semester hours*

LNTP 258 Landscape Management (G only)
Landscape management skills in site preparation and modification for landscape planting. Handling of balled and burlapped plant stock and container nursery stock in the transplanting process. Evaluating the soils of planting sites. Study of fertility practices, drainage problems, use and limitations of soil amendments, methods for selecting healthy plant material, pruning techniques, mulch materials, and chemical and nonchemical methods of weed control. Understanding the job estimating process. *Assessment level: AELR 930/READ 099. Two hours lecture, two hours laboratory each week. Formerly LN 118.* *3 semester hours*

LNTP 271 Plant Propagation and Production (G only)
Introduction to the principles, techniques, and facilities used to propagate and produce a broad range of ornamental plants, including native plants, annuals and perennials, small fruit and tree fruit. Topics include seed propagation, cutting, grafting, budding, division, layering, and tissue culture. *Two hours lecture, two hours laboratory each week. Formerly LN 210.* *3 semester hours*

LNTP 280 Landscape Technology Internship (G only)
Students will design, with guidance from an instructor, an individual career work experience in the horticulture or turfgrass industry. The intent is to give students an appropriate work experience that will expand their knowledge and aid them in making career decisions. PREREQUISITE: *Completion of 16 semester hours of landscape technology courses or consent of department. Six hours each week. Formerly LN 280.* *2 semester hours*

MATH—Mathematics

Most mathematics courses require the use of a graphing calculator and/or a computer.

Completion of a mathematics foundation course or its equivalent is a requirement for any student earning an associate's degree at Montgomery College, and for most transfer programs as well. Additional mathematics courses may be required for specific programs. Initial placement in mathematics courses is based on a mathematics assessment test score, other standardized test scores, or previous college-level mathematics coursework. Please consult with a counselor or departmental adviser for assistance with course selection.

MATH 080 Mathematics Prep
For students who need review of the fundamentals of arithmetic, a thorough introduction to signed numbers, and a presentation of the basic concepts of algebra. Topics include proportion and percent, polynomials, factoring, linear equations and inequalities in one variable including systems, graphing, integer exponents and quadratic equations. Applications are included throughout the course. This self-paced course has no lecture and incorporates independent computer use: in order to advance through course topics, students must achieve required level of mastery. Students scoring below 46 on the Accuplacer Algebra Placement Test are expected to complete the course in two semesters; students scoring 46 or higher are expected to complete in one semester. A student may attempt this course up to four times. *Assessment level: AELR 930/READ 099. For computation of tuition, this course is equivalent to three semester hours. One and one half hours class plus a minimum of two and one half hours in the developmental mathematics laboratory each week. Formerly MA 094* *No credit/No quality points*

Please Note: *Students' progress will be indicated as described in the course syllabus and may not be a traditional letter grade. All indicators of course progress will be explained in the syllabus.*

MATH 085 Essentials of Geometry
Intended for students who have no previous experience with high school level geometry and for those who need a refresher in basic geometry skills for future study. This course covers topics in Euclidean geometry, including inductive and deductive reasoning, analysis and measurement of two- and three-dimensional figures, similarity and congruence, basic constructions, and applications. The use of tools and technology will be included when appropriate. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment level: READ 120. For computation of tuition, this course is equivalent to three semester hours. Three hours each week. Formerly MA 095.* *No credit/No quality points*

MATH 093 Intermediate Algebra for Liberal Arts
Development of algebraic and problem-solving skills and concepts intended to prepare students for a mathematics foundation course. Topics include linear, quadratic, and exponential equations, functions and their applications, modeling and data analysis. This course does not satisfy the prerequisite for MATH 130, MATH 150, or MATH 165. Not intended for students who have a grade of C or better in MATH 096, or their equivalent. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment level: READ 120. For computation of tuition, this course is equivalent to three semester hours. Three hours each week. Formerly MA 097.* *No credit/No quality points*

MATH 096 Intermediate Algebra
An examination of algebraic skills and concepts intended to prepare students for MATH 130, MATH 150, and MATH 165. Algebraic, graphical, numerical, and verbal approaches are used in working with a variety of functions and their applications, including linear, polynomial, exponential, logarithmic, rational, and radical functions. Solve systems of equations. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment level: READ 120. For computation of tuition, this course is equivalent to four semester hours. Four hours each week. Formerly MA 099.*
No credit/No quality points

MATH 098 Introduction to Trigonometry
An examination of right triangle trigonometry and applications. Topics include graphs and equations involving sine, cosine, tangent, and related basic concepts. Usually scheduled to meet 5-7 weeks in the first half or second half of a semester. PRE- or COREQUISITE: *MATH 096, appropriate score on mathematics assessment test, or consent of department. Assessment level: READ 120. Formerly MA 105.*
No credit/No quality points

MATH 110 Survey of College Mathematics (*MATF*)
A general college mathematics course whose topics include linear equations, matrix algebra, linear programming, probability, Markov chains, and mathematics of finance. The applications are primarily from business, economics, and the life sciences. Emphasis is on developing, analyzing, and interpreting mathematical models. PREREQUISITE: *A grade of C or better in MATH 093, MATH 096, MATH 115A, MATH 117A, appropriate score on mathematics assessment test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly MA 110.*
3 semester hours

MATH 113 Introduction to Probability (*MATF*)
An introduction to probability including basic probability, permutations and combinations, expectation and applications of the normal distribution. Related topics in set theory, statistics, and logic may also be covered. PREREQUISITE: *A grade of C or better in MATH 093, MATH 096, MATH 115A, MATH 117A, appropriate score on the mathematics assessment test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly MA 113. 3 semester hours*

MATH 115 Mathematical Ideas (*MATF*)
Intended primarily for students who need only one mathematics foundation course, this course includes topics selected from (but not limited to) graph theory, geometry, number theory, algebra, combinatorics, and statistics. Students address topical applications from management sciences, social sciences, environmental sciences, information technologies, and the arts, with an emphasis on quantitative reasoning. PREREQUISITE*: A grade of C or better in MATH 093, MATH 096, MATH 117A, appropriate score on mathematics assessment test, or consent of department. Assessment levels: ENGL 101/ 101A, READ 120. Three hours each week. Formerly MA 115.* *3 semester hours*

MATH 115A Mathematical Ideas (*MATF*)
Intended primarily for students who need only one mathematics foundation course with an emphasis on quantitative reasoning. This course includes support content from intermediate algebra as needed to study major topics selected from (but not limited to) graph theory, voting and apportionment, geometry, growth and symmetry, number theory, and descriptive statistics. Emphasis is on contemporary applications to real-life problems. Credit may not be earned in both MATH 115A and MATH 117A. Not intended for students with a grade of C or better in MATH 093 or MATH 096. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. For computation of tuition, this course is equivalent to five semester hours. Five hours each week. Formerly MA 115A.*
3 semester hours

MATH 117 Elements of Statistics (*MATF*)
An introductory noncalculus statistics course to serve a variety of students who need a working knowledge of statistics. Descriptive analysis and treatment of data, probability and probability distributions, statistical inferences, linear regression and correlations, chi-square, and some nonparametric statistics. Preexisting statistical computer programs may be used for some applications. PREREQUISITE: *A grade of C or better in MATH 093, MATH 096, or MATH 115A; appropriate score on mathematics assessment test; or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly MA 116. 3 semester hours*

MATH 117A Elements of Statistics (*MATF*)
Intended primarily for students who require both an introductory statistics course and a course of intermediate algebra. This course covers introductory statistics topics such as descriptive analysis and treatment of data, probability and probability distributions, linear regression, and tools of statistical inference while also covering the support content from intermediate algebra needed to study these topics and more. Credit may not be earned in both MATH 117 and MATH 117A. Credit may not be earned in both MATH 115A and MATH 117A. Not intended for students with a grade of C or better in MATH 093 or MATH 096 or their equivalent. PREREQUISITE: *Appropriate score on the mathematics assessment test, a grade of C or better in MATH 080, or consent of department. Assessment levels: ENGL 101/101A, READ 120. For computation of tuition, this course is equivalent to five semester hours. Five hours each week. Formerly MA 116A.* *3 semester hours*

MATH 130 Elements of Mathematics I: Mathematical Reasoning and Number Systems (*MATF*)
An examination of mathematical reasoning, problem solving, and sets. Topics include concepts and processes involving numeration systems, whole numbers, number theory, integers, and rational numbers. Intended for elementary education majors, this course is also suitable for parents of school-age children. PREREQUISITE*: A grade of C or better in MATH 096, appropriate score on the mathematics assessment test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Four hours each week. Formerly MA 130.* *4 semester hours*

MATH 131 Elements of Mathematics II: Geometry and Algebra (*MATF*)
This course covers proportions, percents, and real numbers; basic geometry that includes congruence, similarity, symmetry, and transformations; measurement and coordinate geometry; and algebra emphasizing multiple representations. Intended for elementary education majors, this course is also suitable for parents of school-age children. PREREQUISITE: *A grade of C or better in MATH 130 or consent of department. Four hours each week. Formerly MA 131.* *4 semester hours*

MATH 132 Elements of Mathematics III: Probability, Statistics, and Problem Solving (*MATF*)
This course covers descriptive statistics, sampling, standardized tests, basic probability, counting techniques, expectations, and problem solving in a variety of settings. Intended for elementary education majors, this course is also suitable for parents of school-age children. PREREQUISITE: *A grade of C or better in MATH 131 or consent of department. Four hours each week. Formerly MA 132.*
4 semester hours

MATH 150 Elementary Applied Calculus I (*MATF*)
A general calculus course primarily for business students. Topics include algebraic, exponential, and logarithmic functions and their graphs; an intuitive approach to limits; differentiation; integration; and functions of several variables. Major emphasis is on applications in business, economics, and the life sciences. The course is not open for credit to students who have a grade of C or better in MATH 181 or equivalent. PREREQUISITE: *A grade of C or better in MATH 096, appropriate score on mathematics assessment test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Four hours each week. Formerly MA 160.* *4 semester hours*

MATH 151 Elementary Applied Calculus II
Continuation of MATH 150. Differential and integral calculus for business and non-engineering students. Trigonometric functions, techniques of integration, differential equations, numerical methods, probability, and applications. Not open to students who have a grade of C or better in MATH 182, MATH 282, MATH 284, or their equivalents. PREREQUISITE: *A grade of C or better in MATH 150 or equivalent, or consent of department. Three hours each week. Formerly MA 161.*
3 semester hours

MATH 165 Precalculus (*MATF*)
An examination of topics from advanced algebra, trigonometry, conics, and functions and applied problems. This course is designed to prepare students for MATH 181. PREREQUISITES: *A grade of C or better in MATH 096 and a grade of C or better in MATH 098, appropriate score on mathematics assessment test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. For computation of tuition, this course is equivalent to five semester hours. Five hours each week. Formerly MA 180.*
4 semester hours

Courses designated with an M after the name fulfill the General Education global and cultural perspectives requirement.
Common course outcomes for most courses can be found online at www.montgomerycollege.edu/courses.

MATH 181 Calculus I (*MATF*)
MATH 181 and MATH 182 are intended primarily for students of the physical sciences, engineering, and mathematics. An introduction to major ideas of single variable calculus including limits, derivatives, and integrals of algebraic and transcendental functions; applications. PREREQUISITE: *A grade of C or better in MATH 165, appropriate score on mathematics assessment test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. For computation of tuition, this course is equivalent to five semester hours. Five hours each week. Formerly MA 181.*
4 semester hours

MATH 182 Calculus II CE-R (*MATF*)
A continuation of MATH 181. Further differentiation and integration of transcendental functions. Methods of integration with applications, indeterminate forms, improper integrals, Taylor's formula; infinite series; polar coordinates. PREREQUISITE: *A grade of C or better in MATH 181 or equivalent, or consent of department. For computation of tuition, this course is equivalent to five semester hours. Five hours each week. Formerly MA 182.*
4 semester hours

MATH 280 Multivariable Calculus CE-R
Calculus of vector functions; analytic geometry of space; partial differentiation; multiple integrals; classical theorems of Green, Gauss, and Stokes. PREREQUISITE: *A grade of C or better in MATH 182 or equivalent, or consent of department. For computation of tuition, this course is equivalent to five semester hours. Five hours each week. Formerly MA 280.*
4 semester hours

MATH 282 Differential Equations
First order differential equations; higher order linear differential equations and systems of linear equations; solution by power series and numerical methods; the Laplace transform and some applications. PREREQUISITE: *A grade of C or better in MATH 182 or equivalent, or consent of department. Three hours each week. Formerly MA 282.*
3 semester hours

MATH 284 Linear Algebra
Basic concepts of linear algebra including vector spaces, linear equations and matrices, determinants, linear transformations, similar matrices, eigenvalues, and quadratic forms. PREREQUISITE: *A grade of C or better in MATH 182 or consent of department. For computation of tuition, this course is equivalent to five semester hours. Five hours each week. Formerly MA 284.* *4 semester hours*

MGMT—Management

MGMT 101 Principles of Management CE-G
Overview of the management movement, including development of management theory; survey of the organizational structure and basic managerial functions within organizations; the integration of the functions of management and application of decision making and leadership to general managerial situations. Includes the relationship of the internal and external environment to the organization. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly MG 101.*
3 semester hours

MGMT 110 Small Business Management
Designed for those students desiring to start a business venture. Emphasis will be on capital acquisition, start-up issues, marketing functions, management, and commercial issues that the small business person faces today. PREREQUISITE: *MGMT 101. Three hours lecture/discussion each week. Formerly MG 110.* *3 semester hours*

MGMT 201 Business Law
Examination of the foundations of the U.S. legal system, focusing on those aspects of legal liability that might impose the greatest monetary penalties and damages on the commercial enterprise. Topics covered include the law of torts, product liability, accountants' liability, business crimes, contracts, agency, and public policy issues dealing with ethics and international law. PREREQUISITE: *BSAD 101 or MGMT 101. Three hours each week. Formerly MG 201.* *3 semester hours*

MGMT 207 Principles of Supervision
An overview of supervision, including investigating leadership styles, considering the role of the manager as a first-line supervisor and delegator. Practical situations and examples emphasize achieving organizational objectives through effective communications, day-to-day problem solving, planning, leadership, decision making, and motivating workers for effective productivity. PREREQUISITE: *MGMT 101, appropriate work experience, or consent of department. Three hours each week. Formerly MG 102.* *3 semester hours*

MGMT 211 Introduction to Marketing
A survey of the global marketing environment in terms of both business and consumer goods and services. Buying behavior and targeting markets are emphasized. The marketing mix, including product, promotion, price, and distribution, is featured through the use of experiential marketing applications. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly MG 103.*
3 semester hours

MGMT 214 Human Resources Management CE-G
Discusses the functions and trends in human resources management that include staffing, the legal environment, compensation and benefits, safety and health, employee and union relations, training and career development, performance appraisal, and the global environment. PREREQUISITE: *MGMT 101. Three hours lecture/discussion each week. Formerly MG 204.*
3 semester hours

MGMT 220 Organizational Behavior
Analyzes human interaction in management situations for their effect on management's aims. Examines the demands of workers, informal groups, unions, and organizational structure for their influence on effective supervision and implementation of standard human resource administrative functions. PREREQUISITE: *MGMT 101. Three hours lecture/discussion each week. Formerly MG 205.* *3 semester hours*

MGMT 225 Legal Issues in Labor Management
(also listed as HMGT 207)
Introduction to the legal implications of employer/employee relations. Topics include a brief history of the labor movement in the United States, the major acts establishing the framework for labor/management relations, union negotiations, procedures and contracts, and the economic impact of unionization. Discrimination in employment, Title VII and its implications in hiring, firing, and working conditions, as well as other statutes and regulations affecting employment relations. PREREQUISITE: *HMGT 211, MGMT 207 or consent of department. Three hours each week. Formerly MG 207.*
3 semester hours

MGMT 235 Managing Diversity in the Workplace
This course focuses on developing management skills for diversity awareness in the workplace. Diversity includes age, race, gender, disabilities, and cultural background of all individuals. PREREQUISITE: *MGMT 101. Three hours lecture/discussion each week. Formerly MG 120.*
3 semester hours

MGMT 270 Field Experience or Practicum
Application of previous coursework to selected projects in management. Students assume role of consultant or manager. Exercise of management theory, policy, and decision making in research and support of conclusions. For those students who qualify, a practicum in lieu of course load credit may be given for concurrent practical on-the-job experience provided a minimum of 120 hours of supervised experience is recorded in a department-approved position. PREREQUISITE: *Consent of instructor. One hour seminar, eight hours field practicum each week. Formerly MG 210.*
3 semester hours

MGMT 288 Disaster Recovery and Risk Management
Provides individuals with the skills to plan for and recover from both natural and man-made disasters. Students examine risk and crisis management; the need for business continuity and information assurance planning; and the leadership, human, organizational, and public policy components of disasters. The final project is a disaster recovery management plan. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly MG 288.* *3 semester hours*

MHLT—Mental Health

MHLT 101-102 Introduction to Mental Health I and II (TP/SS only)

An introduction for beginning mental health students in their training toward becoming responsible, aware agents-for-change in their communities.

MHLT 101: History, concepts, roles, and institutions of the mental health field. Emphasis on the role of the mental health associate and development of a conceptual frame of reference. Exploration by the beginning student of area facilities. PREREQUISITE: *Consent of department. Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly MH 101.* *3 semester hours*

MHLT 102: Skill training in the use and the application of the tools of mental health workers, such as interviewing, behavior modification, diagnostic and evaluative methods, research, community mental health approaches, and other skills as the need arises. A continual discussion of professional ethics and responsibilities is maintained throughout the course. PREREQUISITES: *MHLT 101 and consent of department. Three hours each week. Formerly MH 102.* *3 semester hours*

MHLT 112-213 Group Dynamics I and II (TP/SS only)

These two courses are to be taken consecutively in order to provide a continuous one-year experience. Focus is on helping students to realize their potential for growth more fully and to increase their ability to work with others in a variety of situations. Experiential learning is directed toward the development of self-insight and awareness of impact upon others through a variety of techniques. Lectures, discussion, and reading materials are directed to an understanding of group processes, including factors of cohesion, leadership, conflict, individual roles, communication systems, tasks, and problem solving. PREREQUISITES: *PSYC 102 or concurrent enrollment and consent of department. MHLT 112 is a prerequisite for MHLT 213. Two hours lecture, two hours laboratory each week. Formerly MH 112-213.* *3-3 semester hours*

MHLT 200 Practicum, Fieldwork in Mental Health/Human Services (TP/SS only) **CE**

Provides a continuous fieldwork experience in mental health and other human services. Students are assigned to a community human services facility. Their participation is supervised by the instructor and appropriate personnel at the facility. The seminar on campus provides an opportunity for the students to discuss concepts of working in a helping relationship; to verbalize and to learn to handle their feelings about the work experience; and to continue the study and applications of human services worker skills, such as case study methods, testing procedures, interviewing, behavior modification, communication problems, group activities, counseling, and staff relations. In the second semester, training will continue as in the first semester, but with increasing responsibility. Students will be working at a more sophisticated level, using more independent judgment and discrimination. Practice, using group process skills both as leader and group member in various client and staff relations, will be added to fieldwork. Each student will be expected to find an area of special interest and to gain some expertise in it through more practice and experience. PREREQUISITES: *MHLT 101 and MHLT 112. Two-hour seminar each week, 200 hours fieldwork each semester. Course may not be repeated more than two times. Formerly MH 200.* *6 semester hours*

MHLT 208 Activity Therapies (TP/SS only)

Laboratory study and experience of a survey of treatment approaches used in various activity therapies selected from art, music, dance, occupational and recreational therapies, and storytelling. Experience with methods of nonverbal communication. PREREQUISITES: *PSYC 102 and consent of department. Three hours each week. Formerly MH 208.* *3 semester hours*

MUSC—Music

MUSC 110 Listening to Music *(ARTD)*

For non-music majors or by consent of the department. Directed listening with emphasis on how to listen to music such as symphony, opera, ballet, chamber music, art song, and contemporary music. Students are required to devote time to listening outside of class. *Assessment levels: ENGL 101/ 101A, READ 120. Three hours each week. Attendance at one concert required. Formerly MU 110.* *3 semester hours*

MUSC 117 World Music *(ARTD[M])*
This course presents a survey of cross-cultural popular music and the traditional music that influenced it. The class will address social and cultural roles of the music and factors influencing its development and dissemination. Students will learn by participating in music-making, listening to live and recorded music, reading, writing, and discussing. *Three hours each week. Formerly MU 111.*
3 semester hours

MUSC 125 History of Jazz *(ARTD[M])*
(R and TP/SS only)
A survey of jazz in the United States from the turn of the century to the present. Several major African American figures will be studied in depth. The art of listening to jazz music will be emphasized; outside listening will be required. Open to all students. *Three hours each week. Formerly MU 133.*
3 semester hours

MUSC 131 American Popular Music
(ARTD[M])
A survey of American popular music from the turn of the 20th century to the present with an emphasis on rock music. Open to all students. *Three hours each week. Formerly MU 136.* *3 semester hours*

MUSC 137 Class Voice (R only)
Functional training in correct breathing, tone production, and diction through which the student may develop specific vocal abilities. Discussion of the general principles of singing. A selected and graded number of repertoire forms the basis for study. Required of piano and organ majors in music education but open to all students by consent of department. *Four hours each week. Formerly MU 108.* *2 semester hours*

MUSC 138 Class Guitar I
Fundamental playing techniques of the guitar. This includes basic finger technique and leads to a fundamental technical proficiency. Open to all students. *Four hours class instruction each week. Formerly MU 109.* *2 semester hours*

MUSC 141-142 Class Piano (R only)
CE for MU 106
Functional piano training for beginners, using methods and materials suitable for public school teaching. Basic keyboard skills for development of ability to improvise accompaniments, transpose, sight read, and play by ear. Technical studies and repertoire of elementary piano pieces. Required of all students in music education. MUSC 141 offered fall semester; MUSC 142 offered spring semester. PREREQUISITE: *MUSC 141 for MUSC 142 or consent of department. Four hours class instruction each week. Formerly MU 106-107.*
2-2 semester hours

MUSC 145, 146 Applied Music Elective
Provides individual voice and instrument instruction for students who may qualify as music majors but need additional study or time before beginning the music major curriculum. Music majors who need additional instruction, in primary or secondary instruments, after beginning the music major applied sequence are also eligible to enroll. This course is also suitable for performing arts majors in other departments within the college. PREREQUISITE: *Consent of department. This course may be repeated up to three times. MUSC 145 requires a one half-hour lesson and 6 hours of practice each week. An applied music fee is charged. Formerly MU 113, 114.*
1-2 semester hours

*The following letter symbols should be added to the course number for the various applied areas of music instruction, e.g., MUSC 145E for saxophone.

A	–	Flute	M	–	Piano
AA	–	Recorder	MM	–	Jazz Key
B	–	Oboe	N	–	Violin
C	–	Clarinet	O	–	Viola
D	–	Bassoon	P	–	Cello
E	–	Saxophone	Q	–	Double Bass
F	–	French Horn	QQ	–	Electric Bass
G	–	Trumpet	R	–	Organ
H	–	Trombone	RR	–	Harpsichord
I	–	Baritone/ Euphonium	S	–	Accordion
			T	–	Composition
J	–	Tuba	U	–	Voice
K	–	Percussion	UU	–	Jazz Vocal
KK	–	Jazz Percussion	V	–	Guitar
KV	–	Vibraphone	VV	–	Jazz Guitar
L	–	Harp			

Courses designated with an M after the name fulfill the General Education global and cultural perspectives requirement.
Common course outcomes for most courses can be found online at www.montgomerycollege.edu/courses.

MUSC 147-148 Applied Music* (R only)
CE for MUSC 147
Individual instruction in voice, piano, organ, classical guitar, harp, and band and orchestral instruments; only for students matriculated in the music curriculum. Jury examination required at close of each semester. Published course requirements in applied music are available from the Music Department. PREREQUISITE: *MUSC 147 with grade of C or better for MUSC 148.* COREQUISITE: *MUSC 150. One hour lesson and 21 hours practice each week. Formerly MU 115, 116. 2-2 semester hours*

* See footnote following MUSC 145, 146.

MUSC 150 Applied Music Laboratory (R only)
Required of and restricted to students enrolled in applied music courses. *May be repeated for credit. Three hours of laboratory each week and performance at least twice each semester. Attendance at eight approved concerts each semester. Formerly MU 005.*
1 semester hour

MUSC 161 Series—Small Ensembles (R only)
The study and performance of the literature for various small groups. Students may choose to perform in one or more of the following:
MUSC 161C Jazz Ensemble
MUSC 161D World Ensemble
Open to all students by consent of department. *May be repeated. Three hours each week. Formerly MU 180, 181C, 181D.* *1 semester hour*

MUSC 163 College Chorus
The great choral literature forms the basis of study and presentation. Programs include works with orchestra. Concert numbers comprise part of the repertoire. Required of vocal music majors and open to all students. May be repeated. *Three hours each week.* Formerly MU 161. *1 semester hour*

MUSC 166 College Orchestra (R only)
The study and performance of orchestral and choral works from the Baroque, Classic, Romantic, and contemporary music literature. Required of instrumental music majors who play orchestral instruments. Open to all by consent of department. *May be repeated. Three hours each week. Formerly MU 171.*
1 semester hour

MUSC 170 Chamber Singers (R only)
Established as a madrigal-inspired chorus. Music from Renaissance through modern classical, jazz, and popular styles is performed on both the collegiate and recital concert series. Required of vocal music majors. Open to other students by consent of department. *May be repeated. Three hours each week. Formerly MU 162.* *1 semester hour*

MUSC 174 Introduction to Music Technology
An introductory course leading to a basic understanding and appreciation of the elements of music technology, including MIDI, computer music applications, digital audio recording, and sound design. This includes an examination of the elements, instruments, styles, and history of electronic music as well as an overview of necessary music theory. PRE- or COREQUISITE: *MUSC 184 or MUSC 141, or consent of department. Computer experience (Completion of CMAP 106 is strongly recommended) and a background in music are preferred. Three hours each week. Formerly MU 128.*
3 semester hours

MUSC 178 Advanced Applications in Music Technology
A projects-oriented multilevel course studying computer-based sequencing, digital audio recording, sound design, and music notation, as well as multimedia and Internet music applications. Students are required to compose/arrange musical compositions and demonstrate proficiency in computer music applications, MIDI, and multitrack recording. PREREQUISITE: *MUSC 174 or consent of department. Three hours each week. Formerly MU 129.*
3 semester hours

MUSC 181 Musical Recording Techniques
Major recording techniques used in music, including multitrack recording, computer applications and acoustics. PRE- or COREQUISITE: *MUSC 184 or MUSC 141, or consent of department. Computer experience (Completion of CMAP 106 is strongly recommended) and a background in music are preferred. Three hours each week. Formerly MU 130.*
3 semester hours

MUSC 184 Introduction to Music Theory (R only)
An introduction to the basic elements of music, intended for students with limited musical background. Emphasis is on terminology, notation, scales, intervals, triads, and traditional diatonic harmony with a further emphasis on the practical application of these various aspects of music theory. Open to all students. *Three hours each week. Formerly MU 139.* *3 semester hours*

MUSC 187 Musical Theatre Production (R only)
An exploration, development, and creation of all devices necessary to present a musical theatre presentation such as opera, operetta, musical comedy, and the musical drama. Lectures include all phases of drama, music, dance, and business production. Open to all students. *Two hours lecture, three hours laboratory each week. Formerly MU 140.* *3 semester hours*

MUSC 190 Music Theory I (R only) **CE**
The nature of musical sound and its perception, fundamentals of musical notations, scales, intervals, triads, simple diatonic harmony, keyboard application. Normally taken concurrently with MUSC 194. PREREQUISITE: *Music major status or consent of department. Three hours each week. Formerly MU 123.* *3 semester hours*

MUSC 191 Music Theory II (R only)
Continued study of diatonic harmony, including inversions and nonharmonic tones. Dominant and leading-tone seventh chords, secondary dominants, modulation, keyboard application. Normally taken concurrently with MUSC 195. PREREQUISITE: *MUSC 190 with a grade of C or better. Three hours each week. Formerly MU 150.* *3 semester hours*

MUSC 194 Ear Training and Sightsinging I (R only) **CE**
Vocal reading and dictation of rhythm patterns, intervals, interval groups, scales, diatonic patterns, and simple diatonic melodies. Assignments will include work with recorded exercises. Normally taken concurrently with MUSC 190. PREREQUISITE: *Music major status or consent of department. Two hours each week. Formerly MU 124.* *2 semester hours*

MUSC 195 Ear Training and Sightsinging II (R only)
Vocal reading and dictation of rhythm patterns, intervals, and melodies. Dictation of chords and harmonic progressions. Assignments will include work with recorded exercises. Normally taken concurrently with MUSC 191. PREREQUISITE: *MUSC 194 with a grade of C or better. Two hours each week. Formerly MU 151.* *2 semester hours*

MUSC 196 Jazz Improvisation (R only)
The study and use of the basic materials needed to improvise in jazz style. Scales, basic chords, and jazz patterns are learned and applied in classroom performances. In addition, listening to jazz, basic composition, and analysis are employed to bring into focus materials learned and to enhance the skill of the improviser. *May be repeated once for credit. Three hours lecture/practicum each week. Formerly MU 173.* *3 semester hours*

MUSC 198 Advanced Class Voice (R only)
A continuation of the introductory course MUSC 137. Advanced skill development in tone production and repertoire for the solo voice, including the study of Italian, German, French, and English diction. Required of piano and vocal majors in the music education areas; others may enroll with consent of department. Offered fall semester. PREREQUISITE: *MUSC 137 or equivalent vocal training. Four hours class instruction each week. Formerly MU 208.* *2 semester hours*

MUSC 199 Class Guitar II
In-depth study of right hand techniques, continuation of left hand development, and introduction to guitar literature PREREQUISITE: *MUSC 138 or consent of department. Four hours laboratory instruction each week. Formerly MU 203.* *2 semester hours*

MUSC 206 Advanced Class Piano I
Continuation of keyboard techniques developed in MUSC 142. Emphasis on correct harmonization of melodies with various styles of piano accompaniments; transposition, improvisation , modulation, playing by ear. Solo and ensemble performances at the end of each semester. PREREQUISITE: *MUSC 142 or equivalent piano training. By consent of department. Four hours class instruction each week. Formerly MU 206.* *2 semester hours*

MUSC 207 Advanced Class Piano II
Continuation of Advanced Class Piano I. Emphasis on correct harmonization of melodies with various styles of piano accompaniments; transposition, improvisation, modulation, playing by ear. Solo and ensemble performances at the end of each semester. PREREQUISITE: *MUSC 142 or equivalent piano training. By consent of department. Four hours class instruction each week. Formerly MU 207.*
2 semester hours

MUSC 215-216 Applied Music* (R only)
Continued individual instruction in voice, piano, organ, classical guitar, harp, and band and orchestral instruments; only for students matriculated in the music curriculum. Jury examination required at close of each semester. Published course requirements available from the Music Department. Graduation recital is a degree requirement. PREREQUISITE: *A grade of C or better in MUSC 215 for admission to MUSC 216.* COREQUISITE: *MUSC 150. One hour lesson, 21 hours practice each week. Formerly MU 215-216.*
2-2 semester hours

* See footnote following MU 145, 146.

MUSC 233 Music Theory III (R only)
Study of chromatic harmony, introducing the augmented sixth chords and the Neapolitan sixth chord as well as the diatonic seventh and dominant ninth chords. Keyboard application. Study of homophonic forms through the analysis of larger works. Normally taken concurrently with MUSC 227. PREREQUISITE: *MUSC 191 with a grade of C or better. Three hours each week. Formerly MU 226.*
3 semester hours

MUSC 234 Music Theory IV (R only)
Review of tonal harmony, ninth, eleventh, and thirteenth chords. Keyboard application. Introduction to counterpoint. Beginning serial technique. Normally taken concurrently with MUSC 238. PREREQUISITE: *MUSC 233 with a grade of C or better. Three hours each week. Formerly MU 250.* *3 semester hours*

MUSC 237 Ear Training and Sightsinging III (R only)
Vocal reading and dictation of intervals and difficult melodies and rhythm patterns. Dictation of progressions containing some chromaticism. Easy two-part dictation. Assignments will include work with recorded exercises. Normally taken concurrently with MUSC 226. PREREQUISITE: *MUSC 195 with a grade of C or better. Two hours each week. Formerly MU 227.* *2 semester hours*

MUSC 238 Ear Training and Sightsinging IV (R only)
Two-part dictation of moderate difficulty, vocal reading, dictation of nontonal melodies, and dictation of chromatic chord progressions and modulations. Assignments will include work with recorded exercises. Review of the material from MUSC 227. Normally taken concurrently with MUSC 234. PREREQUISITE: *MUSC 237 with a grade of C or better. Two hours each week. Formerly MU 251.*
2 semester hours

MUSC 245-246 Advanced Applied Music* (R only)
Continued individual instruction, for music majors, in any applied instrument or voice. Extensive repertoire study and performance. Students must appear in recital as part of degree requirement. PREREQUISITES: *Consent of department. For MUSC 245, MUSC 216; for MUSC 246, MUSC 245. By audition placement or by sequence. One hour lesson and 21 hours practice each week. Formerly MU 255-256.* *2-2 semester hours*

* See footnote following MUSC 145, 146.

MUSC 285 Music Internship
Students work for College credit in a professional performing arts organization or venue. Students may propose an internship for one of the limited number available in music each year. Typically, the internships are awarded during the last year of study at Montgomery College. PREREQUISITES: *Open to music majors who have completed 24 music-related credits. A 3.2 GPA and consent of departmental music internship coordinator and the Arts Institute internship coordinator are required. Fifteen hours each week per semester. Formerly MU 295.*
3 semester hours

NURS—Nursing

NURS 113 Fundamentals of Nursing (TP/SS only)

Introduces the theoretical concepts of clinical reasoning, nursing process, teaching-learning, culture, caring, growth and development, evidence-based practice, delegation, conflict and basic human needs as they relate to nursing care. Psychomotor and affective skills are taught and practices. PRE- or COREQUISITES: *BIOL 212, NURS 121, either PSYC 102 or PSYC 203; or consent of program coordinator.* COREQUISITE: *NURS 114. Three hours lecture/discussion, 12 hours laboratory each week. Formerly NU 113. 7 semester hours*

NURS 114 Professionalism and Communication in Nursing (TP/SS only)

Facilitates the student's entry into the nursing program and the health care system. Emphasis is placed on concepts related to professional practice and the development of communication skills necessary for nursing practice. Legal and ethical issues related to health care are introduced. Therapeutic communication, documentation and delegation are examined. PREREQUISITE: *Admission to the nursing program or consent of program coordinator.* PRE- or COREQUISITE: *NURS 121.* COREQUISITE: *NURS 113. Three hours laboratory each week. Formerly NU 114. 2 semester hours*

NURS 121 Basic Health Assessment (TP/SS only)

Provides instruction and guided practice in the assessment techniques used to gather subjective and objective data from patients in a health care setting and the documentation of that data. Assessment of all body systems is covered. PREREQUISITE: *Admission to the nursing program or consent of the program coordinator.* PRE- or COREQUISITE: *BIOL 212. Three hours laboratory each week. Formerly NU 121. 1 semester hour*

NURS 122 Supplemental Clinical Practicum (TP/SS only)

Optional clinical elective for nursing students who want the opportunity to increase their clinical skills, their ability to organize and prioritize patient care, and their familiarity with the hospital setting. Students work under the guidance of a Registered Nurse preceptor in collaboration with the clinical instructor. PREREQUISITE: *Consent of program coordinator. This course may be repeated for credit. Three eight-hour days each week for three weeks. Formerly NU 122. 2 semester hours*

NURS 125 Nursing in Health and Illness I (TP/SS only)

Introductory medical surgical nursing course which builds on the conceptual foundations and core integrated nursing concepts taught in previous courses. Nursing concepts are applied in an interdisciplinary practice environment where emphasized. PREREQUISITES: *A grade of C or better in BIOL 212, NURS 113, NURS 114, NURS 121, PSYC 102 or PSYC 203.* PRE- or COREQUISITES: *BIOL 213 and mathematics foundation, or consent of program coordinator.* COREQUISITES: *NURS 126 and NURS 129. Two hours lecture, six hours laboratory each week. Formerly NU 125. 4 semester hours*

NURS 126 Nursing Care of Special Populations I: Geriatric and Psychiatric Nursing (TP/SS only)

Introduces concepts related to mental health and illness across the lifespan as well as the unique physiologic and psychosocial needs of the older adult. Healthy aging of the older adult patient is emphasizes. PREREQUISITES: *A grade of C or better in BIOL 212, NURS 113, NURS 114, NURS 121, PSYC 102, or PSYC 203.* PRE- or COREQUISITES: *BIOL 213 and mathematics foundation, or consent of program coordinator.* COREQUISITES: *NURS 125 and NURS 129. Two hours lecture, six hours laboratory each week. Formerly NU 126. 4 semester hours*

NURS 129 Pathophysiology and Pharmacology in Nursing (TP/SS only)
Introduces pharmacodynamics, pharmacokinetics and pharmacotherapeutics of various classifications of medications as they relate to basic pathophysiology seen in each body system. Emphasis is on the nursing implications and patient education required for safe administration of each class. Students explore the role and responsibility of the registered nurse in administering and evaluating medications. PREREQUISITES: *A grade of C or better in BIOL 212, NURS 113, NURS 114, NURS 121, PSYC 102 or PSYC 203.* PRE- or COREQUISITES: *BIOL 213 and mathematics foundation, or consent of program coordinator.* COREQUISITES: *NURS 125 and NURS 126. Two hours each week. Formerly NU 129. 2 semester hours*

NURS 130 LPN Transition Course (TP/SS only)
Designed to ease the transition of Maryland Licensed Practical Nurses (LPN) into the associate's degree (AD) nursing program. specific concepts drawn from the first year of the AD nursing program, related to professional nursing practice, are taught. Other concepts familiar to LPNs are expanded in both breadth and depth. The nursing process is stressed with a focus on health assessment and the use of concept maps for planning, implementing, and evaluating nursing care. All aspects of professional communication are explored and practiced. Supervised clinical experiences enhance the LPNs grasp of professional nursing care for clients with alterations in the physiological and psychosocial processes. PREREQUISITES: *Admission to the nursing program or consent of program coordinator. A grade of C or better in BIOL 212, BIOL 213, mathematics foundation, and ENGL 101/101A. Seven hours lecture/discussion, 14 hours laboratory each week for 13 weeks. Formerly NU 130. 8 semester hours*

NURS 140 Independent Study in Nursing (TP/SS only)
An independent study course to enable nursing students to pursue a topic of their own choosing with the guidance and supervision of an assigned faculty member. It will provide a structured learning experience to broaden the student's understanding of a particular aspect of nursing, health care, or disease modality. Topics will not duplicate curriculum content, but may expand on that content. This course may be repeated provided that a different topic is covered each time. PREREQUISITE: *Admission to the nursing program and consent of program coordinator. Forty-five hours of work required per semester hour of credit. Letter designators in the schedule of classes will indicate the number of credits. Formerly NU 200. 1–4 semester hours*

NURS 205 Transition to Professional Nursing Practice (TP/SS only)
Facilitates the graduating nursing student's entry into the profession. Includes study of the ever-changing health care delivery system and the nurse's evolving roles, responsibilities, and scope of practice within it. Legal, ethical, and socio-political considerations of the profession are explored. Accountability for own evidence-based practice is stressed. Resumes and applications for testing and licensure are completed. Must be taken during the final semester of the nursing program. PREREQUISITE: *Admission to the nursing program or consent of program coordinator. One hour each week. Formerly NU 205. 1 semester hour*

NURS 210 Pharmacology in Nursing (TP/SS only)
Study of the pharmacodynamics, pharmacokinetics, and pharmacotherapeutics of various classifications of medications with emphasis on the nursing implications and patient education required for safe administration of medications. PREREQUISITES: *A grade of C or better in BIOL 212, and mathematics foundation or consent of program coordinator.* PRE- or COREQUISITE: *BIOL 213. Three hours each week. Formerly NU 210. 3 semester hours*

NURS 225 Nursing in Health and Illness II (TP/SS only)
Intermediate medical-surgical nursing course continues the progression of concepts learned in the first two nursing semesters. Students now apply the basic principles learned in prior nursing courses to patients with complex, multi-system disease processes. Core integrated nursing concepts include: safety, clinical reasoning, patient centered care, interdisciplinary collaboration, professionalism, informatics and evidence based practice. Students are now expected to assess, plan and deliver care, evaluate outcomes, and critically reflect on learning while providing care for multiple complex medical-surgical patients. PREREQUISITES: *A grade of C or better in BIOL 213, NURS 125, NURS 126, NURS 129, and mathematics foundation or consent of program coordinator. PRE- or* COREQUISITES: *BIOL 210, and English foundation.* COREQUISITE: *NURS 226. Two hours lecture/discussion, six hours laboratory each week. Formerly NU 225. 4 semester hours*

NURS 226 Nursing Care of Special Populations II: Maternal/ Child Nursing (TP/SS only)
Provides the student opportunities to implement the nursing process in acute and community settings. The focus of care is on women and the family during the childbearing cycle. the newborn, and the child through adolescence. PREREQUISITES: *BIOL 213, NURS 125, NURS 126, NURS 129 and mathematics foundation or consent of program coordinator.* PRE- or COREQUISITES: *BIOL 210 and English foundation.* COREQUISITE: *NURS 225. Three hours lecture/discussion, six hours laboratory each week. Formerly NU 226. 5 semester hours*

NURS 233 Nursing Management in Health and Illness (TP/SS only)
Introduces management and leadership concepts applicable to a variety of health care settings. Alterations in health that impact communities, families, and groups are studied. Emphasis is placed on applications of these concepts in groups, and in community health and pediatric settings. PREREQUISITES: *A grade of C or better in BIOL 210 and NURS 230, or consent of program coordinator.* PRE- or COREQUISITES: *SOCY 100, SOCY 208 or SOCY 240, and humanities distribution.* COREQUISITE: *NURS 205. Four hours lecture/discussion, 12 hours laboratory each week for seven weeks. Formerly NU 233. 4 semester hours*

NURS 234 Nursing in Family Newborn and Woman's Health (TP/SS only)
Provides the graduating nurse opportunities to implement care in acute and community settings and refine clinical skills. The focus of care is the family during the childbearing cycle, the newborn, and the health needs of women throughout the life cycle. PREREQUISITES: *A grade of C or better in BIOL 210 and NURS 230, or consent of program coordinator.* PRE- or COREQUISITES: *SOCY 100, SOCY 208 or SOCY 240 and humanities distribution.* COREQUISITE: *NURS 205. Four hours lecture/discussion, 12 hours laboratory each week for seven weeks. Formerly NU 234. 4 semester hours*

NURS 240 Nursing in Health and Illness III (TP/SS only)
Concentration is placed on the principles involved in organizing, managing and delivering care appropriate for the adult with various complex health problems. The focus moves from self-limiting and chronic health issues to acute emergent care of the adult patient. This course will also encompass additional management and leadership concepts in nursing. PREREQUISITIES: *A grade of C or better in BIOL 210, NURS 225, NURS 226 and English foundation.* Pre- or COREQUISITES: *SOCY 100, SOCY 208, or SOCY 240, and Arts and Humanities distribution.* COREQUISITE: *NURS 205. Three hours lecture/discussion, 12 hours laboratory each week. Formerly NU 255. 7 semester hours*

NUTR—Nutrition and Food

NUTR 101 Introduction to Nutrition *(NSND)* (R only)
Study of nutrition as it relates to health and disease. Includes functions of nutrients; factors affecting nutrient intake, absorption, and utilization; and nutrient needs during the life cycle and illness. Emphasis on planning and preparing daily diets for optimal health. Course concludes by applying the principles of diet modifications to the treatment of disease. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly NF 103. 3 semester hours*

NUTR 202 Nutrition Through the Life Cycle (R only)
Designed to examine the nutritional needs of humans as they move through the life cycle stages from pre-conception through elder years. It also examines conditions that may alter or substantially impact nutrition at these stages; reviews programs which provide support for food or nutrition education at various life cycle stages; and uses case study data to assess nutrition issues/conditions. Students will assess adequacy of diets as well as design diets to meet needs during various life cycle stages. PREREQUISITE: *BIOL 226, NUTR 101 or consent of department. Three hours each week. Formerly NF 202.* *3 semester hours*

NUTR 212 Food Science and Technology
A general overview of principles of food science and technology, covering food constituents and properties; quality and safety; preservation methods; food regulation; and sensory evaluation. PREREQUISITE: *BIOL 226 or NUTR 101, or consent of department. Three hours lecture each week. Formerly NF 212.* *3 semester hours*

NWIT—Network and Wireless Technologies

Significant changes have been made to some of the NWIT courses because of the consolidation of the network engineering program into the network and wireless technologies A.A.S. Students currently enrolled in the networking program should see a faculty adviser in order to select courses to complete their program of study.

Montgomery College strives to provide the most recent software versions and courseware in our Information Technology Institute offerings. Please consult our website for the versions of Exchange Server currently being offered: www.montgomerycollege.edu/iti/networking/networking_home.htm

NWIT 101 Introduction to Wireless Technologies (G only)
An examination of the rapid change from wired telephony and wired networks to wireless technologies. Students learn how radio frequency is used in wireless and how wireless network cards communicate with Access Points (the antenna for wireless). The course covers how industry classifies wireless data communications today and looks at the advantages and disadvantages of various data communication systems. Cellular technology, antennas, base station and telephone switches are introduced. The new technologies in wireless that augment cellular technology are discussed. *Assessment level: MATH 093/096. Three hours each week. Formerly NW 101.* *3 semester hours*

NWIT 127 Microcomputer Essentials (G only) **CE**
An introduction to microcomputer hardware, peripheral, networking, and security components. Students will understand the basic functionality of the operating system and basic troubleshooting methodology, practice proper safety procedures, and will effectively interact with customers and peers. In addition, this course prepares students to take the Essential exam for the CompTIA A+ Certificate. *Assessment level: AELR 930/READ 099. Three hours each week. Formerly NW 127.* *3 semester hours*

NWIT 130 Network Cabling Technology (G only)
Features hands-on instruction designed to cover cabling techniques using co-ax, copper, and fiber for video, voice data communications, and networking. Students will master basic cabling techniques using state-of-the-market equipment in accordance with industry standards. *Assessment levels: MATH 093/096, AELR 930/READ 099. Two hours lecture, three hours laboratory each week. Formerly NW 130.* *3 semester hours*

NWIT 140 Microcomputer Practical Application (G only) **CE**
Designed to provide competence in PC support areas such as installation, preventative maintenance, networking, security and troubleshooting. Students will have the skills required to install, configure, upgrade, and maintain PC workstations, the Windows OS and SOHO networks and will utilize troubleshooting techniques and tools to effectively and efficiently resolve PC, OS, and network connectivity issues and implement security practices. In addition, this course prepares students to take the Practical Application exam for the CompTIA A+ Certificate. *Assessment level: AELR 930/READ 099. Three hours each week. Formerly NW 140.* *3 semester hours*

NWIT 150 Electronics for Wireless (G only)
Designed as the first in a series of wireless courses. Students are trained in the use of oscilloscopes, frequency analyzers, signal generators, power supplies, and analog and digital multimeters. Topics include technical notation, AC/DC, logic circuits, amplifier circuits, and the theory and operation of solid state devices. Students are introduced to inductors, capacitors, transformers, diodes, bipolar junction transistors (BJTs), and field effect transistors (FETs*). Assessment levels: MATH 093/096, AELR 930/READ 099. Three hours lecture, three hours laboratory each week. Formerly NW 150.* *4 semester hours*

NWIT 151 Introduction to Networking (G only)
An introduction to networking technologies. This course covers the basics of networking, the open systems interconnection (OSI) reference model, transmission control protocol/Internet protocol (TCP/IP) addressing, electricity, specifications and techniques of building data cabling, and local area network/wide area network (LAN/WAN) technologies. *Assessment level: MATH 093/096. Three hours each week. Formerly NW 151.* *3 semester hours*

NWIT 170 Network Operating Systems (G only)
An introduction to computer network operating systems. The topics include wireless network systems, sharing disks and files through Server Networking Operating Systems, and using Windows, Linux, and Novell Servers. Students will install and configure Windows, Linux, and Novell OS. *Assessment levels: MATH 093/096, AELR 930/READ 099. Three hours each week. Formerly NW 170.* *3 semester hours*

NWIT 173 Network Security (G only)
An examination of security issues involved in the use of wired networks. Tools and techniques used to safeguard private and government enterprise computer organizations are addressed. PREREQUISITE: *NWIT 151 or consent of department. Two hours lecture, three hours laboratory each week. Formerly NW 173.* *3 semester hours*

NWIT 200 Microsoft Windows Client Operating System (G only)
An introduction to the concepts and skills necessary to support the most current Microsoft Windows network client operating system. The course covers technical areas that include installation, administration, basic security, and troubleshooting, and is designed for students seeking Microsoft professional certification (MCSA and MCSE). PREREQUISITE*: NWIT 151 or successful completion of CompTIA's Network+ certification examination, or appropriate networking experience with consent of department. Three hours each week. Formerly NW 199.* *3 semester hours*

NWIT 203 Microsoft Windows Server (G only)
Introduction to the concepts and skills necessary to support the current Windows server operating system. Enterprise server systems areas include installation, administration, and troubleshooting. Designed for students on the Microsoft Certified Systems Engineer Track, this course provides them with the knowledge and skills required for NWIT 204 and helps prepare them for Microsoft Professional Certification for installing, configuring and administering the current version of Microsoft Windows. PREREQUISITE: *NWIT 151 or consent of department. Three hours each week. Formerly NW 203.* *3 semester hours*

NWIT 204 Supporting Microsoft Windows Network Infrastructure (G only)
Designed for new-to-product support professionals. This course teaches the concepts and skills necessary to install, configure, manage and support a network infrastructure that uses the current Microsoft Windows Server products. PREREQUISITE: *NWIT 203 or consent of department. Three hours each week. Formerly NW 204.*
3 semester hours

NWIT 205 Implementing and Administering Microsoft Windows Directory Services (G only)
Covers the concepts and skills necessary to install, configure, and administer the current version of Microsoft Windows directory services. This course also provides them with the knowledge and skills required for Microsoft professional certification (MCSA or MCSE). In addition, the course focuses on implementing Group Policy and understanding the Group Policy tasks required to centrally manage users and computers. PREREQUISITE: *NWIT 203 or consent of department. Three hours each week. Formerly NW 205.* *3 semester hours*

NWIT 229 Wireless Communications (G only)
An introduction to modulation and demodulation theory and circuits used in amplitude, phase and pulse code modulation. Analysis of receiver and transmitter characteristics including sensitivity, noise, tuning and alignment techniques, properties of transmission lines, and impedance matching will be incorporated. This course also covers the fundamentals of Base Stations, Mobile Switching Centers, and how the system functions as a whole (ASK, FSK, PSK, QAM, CDMA, W-CDMA, TDMA, GSM, PCS, CDPD, and the third-generation [3G] digital technologies). PREREQUISITES: *NWIT 150 and NWIT 151. Three hours lecture, three hours laboratory each week. Formerly NW 229.*
4 semester hours

NWIT 245 Hardening the Infrastructure (G only) **CE**
Provides network administrators with an awareness of security-related issues and the essential skills they need to implement security in a given network. This course deals directly with protective security technologies in today's enterprise environments: transmission control protocol (TCP) packet analysis, operating systems (OS) hardening, router security, firewall systems, intrusion detection systems, virus protection, virtual private networks (VPN), and disaster recovery. PREREQUISITE: *NWIT 173 or consent of department. Three hours each week. Formerly NW 245.*
3 semester hours

NWIT 246 Network Defense and Countermeasures (G only) **CE**
Focuses on understanding the architecture for network defense and helps prepare students for the Security Certified Network Professional Certification examination. Topics include network attacks and defenses, firewall systems, design and configuration, virtual private network (VPN) configuration, designing and configuring intrusion detection systems, intrusion signatures, and network security policies and configurations. PREREQUISITE: *NWIT 173 or consent of department. Three hours each week. Formerly NW 246.*
3 semester hours

NWIT 252 Cisco Networking 2 (G only)
An examination of initial router configuration, Cisco IOS Software management, routing protocol configuration, TCP/IP. Students configure routers, manage Cisco IOS Software, configure routing protocols, and manage VLSM. This course is the second in a series of four designed to help prepare students to take the CCNA certification exam. This course is equivalent to CyberWATCH course CW 151. PREREQUISITE: *NWIT 151 or completion of Cisco Academy Semester 1 (Exploration 1), or consent of department. Three hours each week. Formerly NW 252.*
3 semester hours

NWIT 253 Cisco Networking 3 (G only) **CE**

An examination of initial switch configuration, Cisco ISO Software managements, and LAN design. Students configure Virtual LANs (VLANs), Virtual Trunking Protocol (VTP), Spanning Tree Protocol (VTP), Inter-VLAN Routing, and are introduced to basic Cisco wireless concepts and configuration. This course is the third in a series of four designed to help prepare students to take the CCNA certification exam. This course is equivalent to CyberWATCH course CW 250. PREREQUISITE: *NWIT 252 or completion of Cisco Academy Semester 2 (Exploration 2), or consent of department. Three hours each week. Formerly NW 253.* *3 semester hours*

NWIT 254 Cisco Networking 4 (G only) **CE**

An examination of Cisco IOS Software management, WAN protocols and technologies, and WAN design. Students configure Point-to-Point Protocol (PPP), Frame Relay, Network Security, Access Control Lists (ACLs), and TCP/IP. In addition, this course is the fourth in a series of four designed to help prepare students for the CCNA certification exam. This course is equivalent to CyberWATCH course CW 251. PREREQUISITE: *NWIT 253 or completion of Cisco Academy Semester 3 (Exploration 3), or consent of department. Three hours each week. Formerly NW 254.* *3 semester hours*

NWIT 255 Cisco Advanced Routing (Cisco Networking Academy— Semester 5)

This course initiates student preparation for Cisco Certified Network Professional (CCNP) certification. Focused on constructing scalable networks, advanced routing concepts, and the Cisco CCNP Routing Exam, it builds on materials covered in four semesters of the Cisco Certified Network Associate (CCNA) program (Montgomery College courses NWIT 151, NWIT 252, NWIT 253, and NWIT 254). Topics include scalable networks, advanced IP addressing techniques, dynamic routing, single-area and point-to-multipoint OSPF, multiarea OSPF, EIGRP, route optimization, BGP, scaling BGP, and network security. PREREQUISITE: *NWIT 254, CCNA certification, or equivalent knowledge and consent of department. Four hours lecture, four hours laboratory each week. Formerly NW 255.* *6 semester hours*

NWIT 261 Managing Network Security I (G only) **CE**

Focuses on the overall security processes in a network with particular emphasis on skills in the following areas: (1) security policy design and management; (2) security technologies, products, and solutions; (3) firewall and secure router design, installation, configuration, and maintenance; (4) AAA implementation using routers and firewalls; and (5) securing the network at both layer 2 and 3 of the OSI model. This course helps prepare students to sit for the Securing Networks with Cisco Routers and Switches (SNRS) and Securing Networks with PIX and ASA (SNPA) Security Certification exams. These are two of the five exams that count toward the Cisco Certified Security Professional (CCSP) certification. In addition, Cisco Network Academy students who pass these two exams will be able to apply for Cisco Firewall/ASA Specialist status. PREREQUISITE: *NWIT 254 or CCNA certification or consent of department. Four hours each week. Formerly NW 261.* *4 semester hours*

NWIT 263 Introduction to Digital Forensics (G only) **CE**

Introduction to the techniques and tools of digital forensics investigations. The course emphasizes digital forensic procedures, digital forensic tools, and legal issues relating to digital forensics. Students receive step-by-step explanations on how to use the most popular forensic tools. Topics include coverage of the latest technology, including PDAs, cell phones, and thumb drives. This course includes many hands-on activities that allow students to practice skills as they are learned. This course is equivalent to Cyber WATCH course CW 170. PREREQUISITE: *NWIT 127. Formerly NW 263.* *3 semester hours*

NWIT 269 Network and Wireless Technologies Internship (G only)
Internship in a professional environment related to the network and wireless technologies program. Students accumulate appropriate work experience that enriches their knowledge and expands career possibilities. Students must propose the internship on their own, but assistance is provided in developing their resume. Students maintain comprehensive records of work experience for course purposes and for seminar discussions. An internship credit requires a minimum of five hours of work experience per semester hour each week for 15 weeks and eight hours of seminar discussions each semester. Students may work five hours per week for one semester to earn 1 credit and can earn 4 credits in four semesters or may work 20 hours per week for one semester and earn four credits in a semester. PREREQUISITES: *Consent of department. Five to twenty hours work experience per week and eight hours of seminar discussions. Formerly NW 269.* *1–4 semester hours*

NWIT 274 Advanced Wireless Communications (G only)
Builds on the technology taught in NWIT 229. The course covers advanced modulation and demodulation (amplitude, frequency, pulse, and digital), coding and decoding, channels, multiplexing and access technology, sampling techniques, PAM, TDM, CDMA, TDMA, GSM, EVDO, IPBH, DS0, DS1, DS3, OC3, OC12, microwave, cellular call flow, wireless performance such as signal level and error rate, keying, and transmission media. Students use oscilloscopes, signal generators, spectrum analyzers, and the Telecommunications Instructional Modeling System (TIMS). The course also covers Wi-Fi to include base-band, broadband, and Multi-channel Multipoint Distribution Service (MNMDS). PREREQUISITE: *NWIT 229. Four hours each week. Formerly NW 274.*
4 semester hours

NWIT 275 Wireless Security (G only)
An examination of wireless security problems to include the different techniques and software used by those who want unauthorized access to a network or computer, what security methodology exists, and what equipment and software are available for wireless security. Students work in teams as network administrators trying to protect the system or as individuals attempting to penetrate the system either overtly or covertly. PREREQUISITE: *NWIT 173. Three hours each week. Formerly NW 275.*
3 semester hours

NWIT 290 Information Security Capstone (G only) **CE**
Provides a review of methods for identifying network vulnerabilities, implementing network defense, and exploring network forensics. Students have opportunities to implement a layered defense on a practical network, including using tools to analyze the vulnerabilities of a network. Additionally, students will research products that could serve as countermeasures against potential attacks, implement security features of the network's operating systems, and develop alternate solutions based upon cost and level of security required. The course also provides students with the practice skills necessary to enhance their existing network security background and prepare for Professional Security Certification(s). PREREQUISITE: *NWIT 246 or consent of department. Three hours each week. Formerly NW 270.*
3 semester hours

PHED—Physical Education

Physical education courses are subdivided into general physical education and courses for professional preparation. See also courses listed under health (HLTH).

Students planning to enroll in courses involving physical activity should consider their personal health history; if they have concerns regarding strenuous activity they should discuss the course with their physician or other appropriate health practitioner.

A 100-level dance (DANC) course may be substituted for any one-credit, 100-level PHED elective.

General Physical Education

PHED 101 Badminton
Emphasizes learning individual skills, tactics, strategy, history, rules, and etiquette. Competitive techniques of singles and doubles play. *Assessment levels: AELW 940/ENGL 002, AELR 920/READ 095.Two hours each week. Formerly PE 101.* *1 semester hour*

PHED 103 Fencing I
Introduction to fencing. Rules and customs. Use of the foil, its application in offense and defense for competition. *Assessment levels: AELW 940/ENGL 002, AELR 920/READ 095. Two hours each week. Formerly PE 103.* *1 semester hour*

PHED 104 Fencing II
Further study of foil fencing techniques as offered in PHED 103. Stresses perfecting foil techniques and further development of fencing skills as a means of recreational enjoyment. PREREQUISITE: *PHED 103 or consent of department. Two hours each week. Formerly PE 104.* *1 semester hour*

PHED 105 Beginning Golf
Emphasis on the full swing, chipping and putting skills, rules, etiquette, and history. *Assessment levels: AELW 940/ENGL 002, AELR 920/READ 095. Two hours each week. Formerly PE 105.*
1 semester hour

PHED 106 Intermediate Golf
Provides for further development of individual skills in the full swing, chipping, and putting. Also covers techniques including unusual lies and creative shotmaking, rules, and etiquette. PREREQUISITE: *A grade of C or better in PHED 105 or consent of department. Two hours each week. Formerly PE 106.* *1 semester hour*

PHED 110 Aerobics Fitness
An individualized fitness program, following a nationally recognized aerobics fitness program, which leads to a high degree of fitness. Swimming, jogging, stationary cycling, treadmill walking, and racquetball will be the aerobic activities offered to meet program goals. *Assessment levels: AELW 940/ ENGL 002, AELR 920/READ 095. One hour lecture, two hours laboratory each week. Formerly PE 110.*
2 semester hours

PHED 111 Martial Arts I
Introduces self-defense techniques taken from various Asian martial arts such as karate, jujitsu, and judo. *Assessment levels: AELW 940/ENGL 002, AELR 920/READ 095. Two hours each week. Formerly PE 111.* *1 semester hour*

PHED 112 Martial Arts II
Continuation of basic exercises and terminology. Emphasis on the most popular forms of martial arts in this country, karate and jujitsu. PREREQUISITE: *PHED 111 or consent of department. Two hours each week. Formerly PE 112.*
1 semester hour

PHED 116 Tennis I
Emphasis on learning basic skills including forehand, backhand, serve, and volley. Strategy, history, rules, and etiquette of the sport. *Assessment levels: AELW 940/ENGL 002, AELR 920/READ 095. Three hours each week for 10 weeks. Formerly PE 116.*
1 semester hour

PHED 117 Tennis II
Review of basic strokes. Emphasis on intermediate-level skills including spin serves, overhead smash, and lob. Competitive techniques and strategy of both singles and doubles. Attention given to execution of a variety of strokes in simulated game conditions. PREREQUISITE: *PHED 116 or consent of department. Three hours each week for 10 weeks. Formerly PE 117.* *1 semester hour*

PHED 120 Beginner Swimming
The beginning skills for the nonswimmer. Designed to build confidence and develop a water-safe student. *Two hours each week. Formerly PE 129.*
1 semester hour

PHED 121 Intermediate Swimming
Designed for students who have some swimming experience. Front crawl, elementary backstroke, breaststroke, sidestroke, overarm sidestroke, and inverted breaststroke. *Two hours each week. Formerly PE 130.* *1 semester hour*

PHED 125 Lifeguard Training
To teach lifeguards the skills and knowledge needed to prevent and respond to aquatic emergencies. Upon satisfactory completion of the course, the student will receive American Red Cross Certifications in Lifeguard Training, Standard First Aid, CPR for the Professional Rescuer, AED Essentials, and Prevention of Disease Transmission. PREREQUISITES: *Must be at least 15 years of age and must pass a swimming proficiency test on first day of class. Assessment level: AELR 930/READ 099. Two hours each week. Formerly PE 134.*
1 semester hour

PHED 128 Water Exercise
Stimulating exercises providing for optimum fitness. Water resistance for developing muscle tone, increased endurance, and figure improvement. Water buoyancy for aiding relaxation, endurance, flexibility, and figure improvement. Stress and tension release through creative exercises in shallow water. *Assessment levels: AELW 940/ENGL 002, AELR 920/READ 095. Two hours each week. Formerly PE 135.* *1 semester hour*

PHED 131 Swimming for Fitness
An individualized exercise program to develop cardiorespiratory fitness. Training methodology and conditioning principles applied to distance swimming. Emphasis on a personalized training program. This course does not include stroke technique. PREREQUISITE: *Swimming proficiency. Assessment level: AELR 930/READ 099. Two hours each week. Formerly PE 137.* *1 semester hour*

PHED 134 Skin and Scuba Diving
This course provides the novice with the minimum knowledge and skills necessary to participate in open water scuba diving activities without direct leadership supervision. Upon successful completion of the course requirements, the student will receive an entry-level scuba diver certification. Scuba cylinder, buoyancy compensator device, regulator, fins, mask, snorkel, and weight belt with six to eight pounds of weight will be provided. PREREQUISITES: *Recent physical examination and must pass a swimming proficiency test on first day of class. Assessment level: AELR 930/READ 099. Ten sessions (one hour lecture, two hours laboratory) plus field trip for open water dives. Formerly PE 138.*
2 semester hours

PHED 137 Whitewater Kayak I
Introduction to the basics of flatwater and river kayaking with rapids of moderate difficulty. Instruction covers paddling skills, equipment selection, water reading, river tactics, trip planning, safety practices, and rescue techniques. Includes three Saturday or Sunday field trips to Potomac and/or Shenandoah rivers. PREREQUISITES: *Basic swimming ability and water confidence. Assessment levels: AELW 940/ENGL 002, AELR 920/READ 095. Two hours each week. Formerly PE 145.*
1 semester hour

PHED 143 Soccer
Emphasizes the basic individual skills including shooting, passing, trapping, and heading. Discussion of tactical and strategic concepts of team play and rules. *Assessment levels: AELW 940/ENGL 002, AELR 920/READ 095. Two hours each week. Formerly PE 162.* *1 semester hour*

PHED 146 Touch Football and Basketball
Individual physical skills, team play, rules, and game strategy. *Assessment levels: AELW 940/ENGL 002, AELR 920/READ 095. Two hours each week. Formerly PE 163.* *1 semester hour*

PHED 149 Yoga
This course includes exercises, postures, and breathing techniques which relieve tension, increase muscle flexibility, and promote good health. The important aspects of yoga such as concentration, body awareness, and body-mind integration will be discussed. Deep relaxation will be practiced at the end of each class. *Assessment levels: AELW 940/ENGL 002, AELR 920/READ 095. Two hours each week. Formerly PE165.* *1 semester hour*

PHED 152 Basketball
Individual physical skills, team play, rules, and game strategy including techniques in passing, shooting, dribbling, offensive and defensive play. *Assessment levels: AELW 940/ENGL 002, AELR 920/READ 095. Two hours each week. Formerly PE 169.* *1 semester hour*

PHED 155 Self-Defense for Men
An introduction to basic self-defense skills. The course includes an exploration of escape and avoidance strategies, offensive and defensive postures, defensive techniques, and simulated attacks. The course will also examine male violence prevention, managing anger, and communication principles in confrontational situations. Finally, fitness principles, such as strength, flexibility, and cardiovascular fitness, will be addressed, particularly in regard to the impact of personal fitness on one's ability to perform the self-defense skills presented in the class. *Assessment levels: AELW 940/ENGL 002, READ 120. Two hours each week. Formerly PE 172.*
2 semester hours

PHED 156 Self-Defense for Women
An introduction to basic self-defense skills. The course includes an exploration of escape and avoidance strategies, offensive and defensive postures, defensive techniques, and simulated attacks. The course will also examine community services available for both violence prevention and victim abuse services. Finally, fitness principles, such as strength, flexibility, and cardiovascular fitness, will be addressed, particularly in regard to the impact of personal fitness on one's ability to perform the self-defense skills presented in class. *Assessment levels: AELW 940/ENGL 002, READ 120. Two hours each week. Formerly PE 173.*
2 semester hours

PHED 160 Dance Aerobics
Uses a combination of dance steps and exercise skills choreographed to music. Lectures on health and fitness-related topics. *Assessment levels: AELW 940/ENGL 002, READ 099/103. One hour lecture, two hours laboratory each week. Formerly PE 174.*
2 semester hours

PHED 163 Weight Training Designs for Women
Emphasizes the design and implementation of individualized weight training programs to meet the specific muscular fitness needs and interests of women. Students will experience and evaluate the potential benefit of weight training exercises to increase lean body tissue, reduce body fat, improve bone density, and develop firmer, more efficient muscles for enhanced appearance and performance. Conditioning techniques will focus on the utilization of weight resistance machines and free weights. *Assessment levels: AELW 940/ENGL 002, AELR 930/READ 099. Two hours each week. Formerly PE 178.* *1 semester hour*

PHED 166 Personal Fitness I
An individualized self-paced fitness course with emphasis on improving the health-related components of physical fitness. Principles of conditioning will be applied to develop a personalized training program to enhance cardiovascular conditioning, strength and muscular endurance, flexibility, and body composition. *Assessment levels: AELW 940/ENGL 002, AELR 930/READ 099. May not be taken in the same semester as PHED 170 or PHED 171. Two hours each week. Formerly PE 183.* *1 semester hour*

PHED 167 Personal Fitness II
An individualized exercise program will be utilized to continue the maintenance and improvement of the health-related components of physical fitness. Includes concepts and methods associated with sustaining motivation and developing a lifestyle adherence to exercise. PREREQUISITE: *PHED 166. Two hours each week. Formerly PE 184.*
1 semester hour

PHED 170 Strength Training and Conditioning I
Application of training principles and the development of safe and effective techniques involved in progressive resistance weight training. Free weights, resistance machines, and specific strength exercises will be utilized by the student to implement an individualized program for optimal gains in muscular strength, muscular endurance, lean body composition, and motor performance. *Assessment levels: AELW 940/ENGL 002, AELR 930/READ 099. Two hours each week. Formerly PE186.*
1 semester hour

PHED 171 Strength Training and Conditioning II
Research-supported techniques and training procedures are applied in the development of strength training and conditioning for sport and physical activity. Programs for absolute strength, speed strength, strength endurance, power, quickness, agility, running speed, jumping ability, anaerobic endurance, and flexibility will be planned and implemented based on personal sport or fitness interests. PREREQUISITE: *PHED 170 or consent of department. Two hours each week. Formerly PE 187.*
1 semester hour

PHED 174 Circuit Weight Training I
Utilizes a timed sequence of weight training exercises and aerobic activities to produce gains in total fitness. Circuit training differs from traditional weight training and uses lighter weight loads with short rest periods between exercises. Participants improve muscular strength and tone, body composition, and cardiovascular endurance. *Assessment levels: AELW 940/ENGL 002, AELR 930/READ 099. Two hours each week. Formerly PE 188.*
1 semester hour

PHED 177 Rock Climbing and Outdoor Challenges
Introduction to basic skills, techniques, equipment, and safety practices used in rock climbing and rappelling. Additional activities include initiative problems, confidence course tasks, and rope traverse events, all designed to challenge students both individually and in group situations. Students will participate in off-campus experiences at Carderock, Great Falls, and the Smith Outdoor Education Center. *Assessment levels: AELW 940/ ENGL 002, AELR 930/READ 099. Two and a quarter hours each week for 12 weeks. Formerly PE 190.* *1 semester hour*

PHED 180 Hiking and Backpacking
Introduction to hiking and backpacking techniques. Discussion on equipment selection, trip planning, route finding, trail cookery, safety procedures, and emergency preparedness for wilderness travel. Emphasis placed on minimum environmental impact, travel and camping methods. Includes short hikes and one or more overnight expeditions. *Assessment levels: AELW 940/ENGL 002, AELR 930/READ 099. Four hours each week. Formerly PE 192.* *2 semester hours*

PHED 183 Introduction to Cycling
Course includes skill development in efficient riding techniques, equipment selection, safety and crucial riding maneuvers, basic maintenance and repair, fitness training, touring and trip planning with field trips to local bike trails. Students must provide a bike with five to ten or more speeds and transportation to off-campus bikeways. *Three hours each week for 10 weeks. Formerly PE 194.*
1 semester hour

PHED 186 Volleyball
This course will teach individual physical skills, team play, rules, and game strategies for the various types of volleyball including two-person, four-person, and six-person formats. *Assessment levels: AELW 940/ENGL 002, AELR 920/READ 095. Two hours each week. Formerly PE 195.* *1 semester hour*

Courses for Professional Preparation (R only)

While the following courses are primarily designed for majors in physical education, they are also open to all students who are interested in a career in either education or recreation.

PHED 140 Introduction to Exercise Science (R only)
An introduction to basic concepts of exercise science, academic curriculum options, and potential career options. Students will be introduced to a variety of academic disciplines within the field of exercise science. Content will include discussions concerning academic preparation and planning, professional organizations, and professional certifications. *Assessment levels: ENGL 101/101A, READ 120. One hour each week. Formerly PE 154.*
1 semester hour

PHED 201 Overview of Physical Education (R only)
Covers the historical, philosophical, social, and practical aspects of American physical education. Students evaluate the field of physical education and its unique contribution to students' physical, social and emotional development. *Assessment level: ENGL 101/101A. Three hours each week. Formerly PE 203.* *3 semester hours*

PHED 204 Foundations of Elementary School Physical Education (R only)

Emphasizes the concepts, theories, and practical application of both activity-based and movement education–based elementary school physical education programs. Material will include movement concepts, locomotor and nonlocomotor activities, manipulative skills, and skill themes. Additional topics will focus on rhythmic activities, low-organized games, educational gymnastics, and other movement experiences for early childhood and elementary school-aged children. Evaluative techniques, teaching strategies, and organizational plans will also be discussed. PREREQUISITE: *A grade of C or better in PHED 201. Three hours each week. Formerly PE 200.* *3 semester hours*

PHED 206 Principles and Practices of Health Fitness (R only)

Covers fundamental principles of health-related fitness. Students develop individualized programs, acquire knowledge of relevant concepts and techniques, assess fitness status, utilize a variety of fitness equipment, and participate in physical activities to promote an understanding of the value of exercise and to encourage permanent lifestyle change. Note: Successful completion of course prepares student to sit for a variety of NCCA-approved Personal Trainer Exam certifications including one from the American Council on Exercise (ACE), American College of Sports Medicine (ACSM), and National Academy of Sports Medicine (NASM). Students should contact the departmental advisor before enrolling in this class. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly PE 202.* *3 semester hours*

PHED 228 Group Fitness Instructor Training (R and TP/SS only)

Course designed to develop skills and knowledge necessary to provide safe and effective group fitness instruction using a variety of exercise modalities. This course includes knowledge and application of training principles and exercise techniques to develop cardiorespiratory fitness, muscular strength, muscular endurance, and muscular flexibility. Scientific principles of anatomy, kinesiology, and exercise physiology are studied and applied. Instructional techniques such as effective communication, motivational skills, class design, injury prevention, cueing, and accommodations for special populations are studied and applied. Course assignments include lesson and unit plan preparations and class teaching experiences. Students successfully completing the course will have the opportunity to sit for the ACE Group Fitness Instructor Certification Exam. *Assessment levels: ENGL 101/101A, READ 120. One and a half hour lecture, two hours laboratory each week. Formerly PE 228.* *3 semester hours*

PHED 230 Advanced Weight Training: Theory and Program Design (R only)

Emphasis on instructional techniques and skill development in progressive resistance strength training. Anatomical, physiological, and biomechanical principles are studied and applied to design effective programs for individuals and specific populations. Equipment considerations, maintenance, safety, organization, and injury prevention are covered in the use of free weights, resistance machines, and plyometric training methods. Students develop the skills to assess, develop, and evaluate muscular strength and endurance programs. Course assignments include in-class practice teaching experiences. Students should contact the departmental advisor before enrolling in this class. PREREQUISITE: *A grade of C or better in PHED 206, or consent of department. Three hours each week. Formerly PE 230.*

3 semester hours

PHED 232 Health Fitness/PE Major Practicum (R only)
In-service training and practical experience, totaling a minimum of 60 hours in an approved health and fitness or physical education setting. Students will meet with a full-time faculty member to develop goals and objectives for their practicum experiences, will keep a weekly journal of accomplishments, and will submit a final report analyzing their overall experiences. PREREQUISITE: *Consent of department. Combines 60 hours of practicum and faculty preceptor's meetings. Formerly PE 231.*
1 semester hour

PHED 237 Advanced Metabolic Assessment and Program Design (R only)
An examination of scientifically-based assessment techniques used to evaluate cardio-respiratory endurance and body composition. Principles of exercise, interpretation of assessment results, and program design are applied to develop safe, individualized exercise programs for apparently healthy individuals and special populations using American College of Sports Medicine guidelines. Safety considerations, identification of risk factors, and contradictions are emphasized. PREREQUISITE: *A grade of C or better in PHED 206, or consent of department. Three hours each week. Formerly PE 237.*
3 semester hours

PHED 240 Personal Training Techniques (R only)
An examination of personal training programming concepts, training methodology, and business practices. Creative program design, motivation strategies, appropriate assessment techniques, communications and interpersonal skills, training styles, and client expectation issues are explored. Students learn various one-to-one instructional techniques appropriate for working with clients at a fitness center, in the home, and in other activity settings. Topics concerning career opportunities, role and responsibilities of trainers, recruitment and retention of clients, business ethics, promotion and marketing strategies, liability insurance, fee structures, certification, and continuing education opportunities will be addressed. Students will gain experience as an apprentice personal trainer during the course sequence. PREREQUISITES: *PHED 230 and PHED 237, or consent of department. Three hours each week. Formerly PE 238.*
3 semester hours

PHED 250 Prevention and Management of Exercise Injuries (R only)
Concepts of prevention, recognition, treatment, and management of injuries and physical disabilities, which affect physical activity and conditioning. Course will include medical history and physical assessment, as well as, adaptations for training and program design needed for various diseases, functional disabilities, injuries, and functional imbalances for the prevention of injuries and safe physical conditioning. This course includes both theoretical and practical aspects of exercise design and program development for healthy populations and those populations with special needs. PREREQUISITES: *HLTH 220, PHED 230, PHED 237, or consent of department. Three hours each week. Formerly PE 250.* *3 semester hours*

PHIL—Philosophy

PHIL 101 Introduction to Philosophy *(HUMD)*
Introduction to philosophical analysis of the problem of knowledge, the problem of reality, and the problem of the good. Major philosophical attitudes of Western civilization are introduced. Special attention is paid to some of the philosophical implications of contemporary natural and social science. The basic themes of the course are that the major questions philosophy deals with are present in the lives of all persons; that we must clarify the questions, if possible, before we try to answer them; and that the basic questions are always concerned with the nature and meaning of human existence. PREREQUISITE: *Second-year standing or consent of department. Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly PL 201.* *3 semester hours*

PHIL 140 Introduction to the Study of Ethics *(HUMD)*
Covers contemporary ethical issues in public policy and personal conduct. Topic areas may include bioethics and medicine; inequality and discrimination; justice and punishment; information ethics; environmental ethics; or other areas. Practical issues in these areas will be discussed in relation to ethical theories. Various ethical perspectives will be critically examined. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly PL 202.* *3 semester hours*

PHIL 143 Introduction to the Study of Religion *(HUMD[M])*
Discusses theories of the source of religion and examines representative Eastern and Western religions. Philosophical implications of the presence of religion in human life will be explored. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly PL 203.*
3 semester hours

PHIL 190 Elementary Logic and Semantics *(HUMD)*
An introductory study of logic and language, intended to increase the student's ability to use language with precision and to reason correctly. Topics include the logic of science and the principles of induction and deduction. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly PL 190.*
3 semester hours

PHIL 201 Morality and Contemporary Law *(HUMD)*
An examination of some social issues that seem to be of current interest from the legal/ethical viewpoint, e.g.: *privacy, crime and punishment, civil and human rights, victimless crimes, police and court practice, sexual and medical practice, freedom and authority. An attempt will be made to view these contemporary problems in a historical perspective. The student is encouraged and expected to know facts, think logically, and develop an independent sense of critical judgment. PREREQUISITE: One course in philosophy, political science, or sociology, or consent of department. Assessment levels: ENGL 101/101A, MATH 093/096, RD 120. Three hours each week. Formerly PL 180.*
3 semester hours

PHIL 205 Philosophy in Literature *(HUMD)*
Reading and philosophical criticism of novels and plays containing ideas significant for ethics, metaphysics, religion, and social policy. Particular attention will be given to modern writers. PREREQUISITE: *Second-year standing or consent of department. Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly PL 205.* *3 semester hours*

PHIL 212 Women in Philosophy I *(HUMD[M])*
Introduces the student to the contributions by women in philosophy from ancient times through the Middle Ages. The course provides a critical examination of their philosophic views and explores philosophical issues such as oppression, morality, the meaning of equality, and the role of the family. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly PL 207.*
3 semester hours

PHIL 218 Women in Philosophy II *(HUMD[M])*
Introduces the student to the contributions by women in philosophy in modern and contemporary times. The course provides a critical examination of their philosophic views and explores philosophical issues such as oppression, morality, the meaning of equality, and the role of the family. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly PL 208.* *3 semester hours*

PHIL 222 Asian Thought
Explores the philosophical, mythical, and religious thought of the traditions of the East, examining secular thought and religious convictions and studying their influence on each other. Buddhism, Hinduism, Shintoism, Taoism, Confucianism, and other substantive thought systems, as well as some indigenous religions, will be discussed. Each tradition's views of nature, society, self, deity, and afterlife will be studied; attention will be paid to the roles of women and/or minority groups within the traditions. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly PL 210.* *3 semester hours*

PHIL 231 Western Religions
Explores the philosophical, mythical, and religious thought of the traditions of the West. Judaism, Christianity, and Islam, as well as some indigenous religions, will be discussed. Each tradition's views of nature, society, self, deity, and afterlife will be studied; attention will be paid to the roles of women and/or minority groups within the traditions. *Assessment levels: ENGL 101/101A, MATH 093/096, READ 120. Three hours each week. Formerly PL 211.* *3 semester hours*

PHOT—Photography

Montgomery College strives to provide the most recent technology in our photography offerings, including the use of digital image capture and printing in addition to a comprehensive traditional photo education. Please contact the Communication Arts Technologies Department or the photography coordinator for the latest course offerings and curricular changes.

PHOT 110 Contemporary Topics in Photography (R only)
Variable topics in photography, presented as a result of community or student interest, to include a variety of photography-related skills or intensive study in a specific area. Topics to be announced each semester in the class schedule. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment level: READ 099/AELR 930. Minimum 15 hours of instruction for each credit hour. May be repeated for credit. Formerly PG 110.* *1–3 semester hours*

PHOT 150 Photography I *(ARTD)* (R only) **CE**
An intensive introduction to equipment and techniques for making black-and-white photographs. Cameras, meters, film, studio techniques, and darkroom techniques are covered. Although no prior photography experience is assumed, the course moves rapidly enough that students who have had less intensive courses at other institutions will quickly be learning new material. Exercises to demonstrate basic skills in photography are performed, but the bulk of the course is dedicated to the preparation of a portfolio of mounted black-and-white prints. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment level: READ 099/AELR 930. One hour lecture, four hours laboratory each week. Formerly PG 150.*
3 semester hours

PHOT 161 Introduction to Digital Photography *(ARTD)* (R only)
An introduction to digital photography using digital cameras and basic image editing software. This course includes print production for making black-and-white and color photographs and studio techniques that include portrait lighting and still life photography. No prior photography experience is required. Students use digital photography for the production of a photographic portfolio. *One hour lecture, four hours laboratory each week. Formerly* PG 161. *3 semester hours*

PHOT 201 Photography II (G and R only)
A transition course between basic photography and advanced photography courses. Students learn control techniques resulting in high-quality negatives, digital files, slides, and prints. Students work with various format cameras and explore photographic color theory. Lighting techniques are taught in detail including studio electronic flash lighting and continuous lighting. The working methods of the professional photographer are explored in the production of a portfolio of black-and-white and color images for commercial or fine art applications. PREREQUISITE: *PHOT 150, PHOT 161, or consent of department. Two hours lecture, four hours laboratory each week. Formerly PG 201.*
4 semester hours

PHOT 210 Photojournalism (G and R only)
Photojournalism projects in newspaper and magazine photography, photo essays, and editorial and advertising layouts. Emphasis is on narrative visual communication with photographs. PREREQUISITE: *PHOT 150, PHOT 161, or consent of department. Two hours lecture, three hours laboratory each week. Formerly PG 210.* *3 semester hours*

PHOT 214 Photoshop for Graphics and Photography (R only)
(Also offered as GDES 214. Credit cannot be received for both PHOTO 214 and GDES 214.)
An in-depth study of digital editing as it applies to the needs of the graphics or photography student and professional. Students manipulate scanned images and digital photographs in preparation for publication layout and design, web output, use in other software packages, or immediate output. Topics include photo-restoration, composite imaging, masking, and the adjustment and correction of images used in graphic design and photography. PREREQUISITE: *None, but previous computer experience is necessary. It is strongly recommended that photography majors take PHOT 161 prior to this course. Two hours lecture, four hours laboratory each week. Formerly PG 214.* *4 semester hours*

PHOT 230 Advanced Image Editing and Correction (R only)
(Also offered as GDES 230. Credit cannot be received for both PHOT 230 and GDES 230.)
An advanced study of digital editing and image correction as it applies to the needs of the graphics or photography student and professional. Students perform contrast and color correction on more difficult scanned images and digital photographs in an effort to gain aesthetic control of the image prior to final output. Topics also include visual and mechanical calibration of input and output devices. PREREQUISITE: *GDES 214 or PHOT 214 or consent of department. Two hours lecture, four hours laboratory each week. Formerly PG 230.*
4 semester hours

PHOT 251 Portrait and Fashion Photography (G and R only)
Advanced techniques for photographing people for portraits, fashion, or illustration purposes. Portrait and fashion lighting for both studio and location are covered in detail. Film or digital capture may be used. Completed assignments will be used to create a professional portfolio in both black-and-white and color. PREREQUISITE: *PHOT 201 or consent of department. Two hours lecture, three hours laboratory each week. Formerly PG 251.* *3 semester hours*

PHOT 260 Black-and-White Materials and Processes (R only)
A detailed examination of all aspects of black-and-white processes from exposure of the negative to final finishing of the print. Students will learn advanced tone control techniques for the production of the highest quality prints. The relationship between craft and image will be explored. Special techniques for altering the black-and-white photographic image are also covered, including special films, filters, high-contrast litho film techniques, Sabattier, hand coloring, and other special processes. The integration of appropriate technique into a personal style is stressed in the production of a professional-style portfolio. PREREQUISITE: *PHOT 201 or consent of department. Two hours lecture, three hours laboratory each week. Formerly PG 260.*
3 semester hours

PHOT 265 Color Materials and Processes (R only)
Offered to advanced photography students to provide a survey of the fundamentals of color photography, including color theory and practical application of camera, film, processing, and color printing techniques. Professional applications are explored using both color transparency and color print materials through the production of a portfolio of images. PREREQUISITE: *PHOT 201 or consent of department. Two hours lecture, three hours laboratory each week. Formerly PG 265.*
3 semester hours

PHOT 269 Special Photography Assignment (R only)
Offered on an individual basis to majors with advanced standing. Students may extend their in-depth studies by exploration of a particular specialization within the curriculum. PREREQUISITE: *Consent of curriculum coordinator and department chairperson. Hours to be assigned by chairperson. Minimum of 30 hours work per semester hour. Formerly PG 269.* *1–4 semester hours*

PHOT 275 Business Practices and Portfolio Development (R only)

This course surveys the usual and customary practices in the field of photography, both as salaried employment and as an independent contracting enterprise. Topics include the role of professional organizations in photographic business; staff and freelance work; self-assessment and self-marketing strategies; forms of business organization; differentiation of types of business expenses for billing purposes; estimating and pricing of photographs and photographic services; use rights fees and licensing; the design of contracts; release agreements; the ownership of photographic images and of related intellectual property; copyright; stock photography; First Amendment and privacy issues; and the new business aspects of digital imaging. Individual and group portfolio and print critiques lead to improvement in the marketability of the student's portfolio, and of the student, through strengthening of image quality and variety and improvement of job interview and portfolio presentation skills. PREREQUISITE: *Advanced standing (PHOT 201 plus one other 200-level photography course) or consent of curriculum coordinator. Three hours lecture and discussion each week, plus scheduled individual conferences. Formerly PG 275.*

3 semester hours

PHOT 285 Photography Internship (R only)

Students work for College credit in a professional photography studio, lab, or other facility. A limited number of internships are available through the department each semester, or the student may propose an internship. PREREQUISITES: *Photography majors with advanced standing and consent of the photography internship coordinator. Fifteen hours of work each week per semester, 3 semester hours; 20 hours of work each week per semester, 4 semester hours. Formerly PG 285.* *3–4 semester hours*

PHTH—Physical Therapist Assistant

PHTH 101 Introduction to Physical Therapy (TP/SS only) **CE**

Provides an introduction and orientation to the field of physical therapy. Course includes historical background, medical-professional ethics and conduct, the role of physical therapist assistant as part of the health care team, PT/PTA collaboration, and orientation to psychological and social needs of the ill and disabled. PREREQUISITE: *Admission to the physical therapist assistant program or consent of program coordinator. Assessment levels: ENGL 101/101A, READ 120. Two hours each week. Formerly PT 101.* *2 semester hour*

PHTH 102 Basic Health Skills for the Physical Therapist Assistant (TP/SS only) **CE**

Instruction in basic health skills used in physical therapy, including anatomical and movement terminology, and chemical, mechanical, and physical principles relative to body function. Skills and practice in body mechanics, patient positioning and transfers, gait training, bandaging, vital signs, and medical asepsis also included. PREREQUISITE: *Admission to the physical therapist assistant program or consent of program coordinator. Assessment levels: ENGL 101/101A, READ 120. One hour lecture, two hours laboratory each week. Formerly PT 102.*

2 semester hours

PHTH 103 Therapeutic Procedures I (TP/SS only) **CE**

Presents therapeutic modalities used by physical therapist assistants, including therapeutic use of heat and cold, massage, and hydrotherapy. In addition, traction, intermittent pressure pumps, and use of electrical currents. Specific conditions requiring use of these treatment modalities will be presented, and contraindications and special precautions for their use will be discussed. Procedures for documentation of patient care will be included. COREQUISITE: *PHTH 112. Credit by exam offered to qualified individuals. Two hours lecture, three hours laboratory each week. Formerly PT 103.*

3 semester hours

PHTH 104 Surface Anatomy, Palpation, and Massage (TP/SS only)
In-depth exploration of surface anatomy and palpation of structures essential for physical therapy practice. Students are introduced to joint movement terminology and performance. Massage techniques are presented along with tests and measures necessary for the safe application of range of motion and massage techniques. PREREQUISITE: *A grade of C or better in BIOL 150.* COREQUISITE: *PHTH 102. One hour lecture, two hours laboratory each week. Formerly PT 104.* *2 semester hours*

PHTH 105 Kinesiology I (TP/SS only)
First of a two part course is the study of human movement. Provides an introduction to kinetics, mechanics, and science. Regional anatomy and kinesiology of the extremities is covered along with the skills of goniometry and MMT. PREREQUISITES: *A grade of C or better in BIOL 212, PHTH 102, and PHTH 103 or consent of program coordinator. One hour lecture, two hours laboratory each week. Formerly PT 105.* *2 semester hours*

PHTH 106 Kinesiology II (TP/SS only)
Second part of the two-part course in the study of human movement. Rational anatomy and kinesiology of the cervical, thoracic, lumbar spine and pelvis are discussed. Principles of kinesiology are applied to posture and gait. PREREQUISITE: *PHTH 105. One hour lecture, two hours laboratory each week. Formerly PT 106.* *2 semester hours*

PHTH 112 Pathology for the Physical Therapist Assistant (TP/SS only)
General pathology with emphasis on the study of diseases and disorders most commonly seen in physical therapy practice. Diseases of the musculoskeletal, nervous, and cardiopulmonary systems as well as metabolic disorders will be emphasized. PREREQUISITES: *BIOL 212 and Admission to the physical therapist assistant program or consent of program coordinator. Two hours each week. Formerly PT 112.*
2 semester hours

PHTH 113 Seminar I (TP/SS only)
First of four seminars dealing with themes of professional issues, core values, and the development of a comprehensive portfolio. These courses will challenge the student to apply professional theme content during standardized patient scenarios and patient simulations. Themes for Seminar I: Interpersonal and professional communication, duty, and integrity (ethical, legal, and safe clinical practice). PRE- or COREQUISITE: *PHTH 101. One hour each week. Formerly PT 113.* *1 semester hour*

PHTH 114 Seminar II (TP/SS only)
Second of four seminars dealing with themes of professional issues, core values, and the development of a comprehesive portfolio. These course will challenge the student to apply professional theme content during standardized patient scenarios and patient simulations. Themes for Seminar II: altruism, caring, compassion, and cultural competence in health care settings. PREREQUISITE: *PHTH 113. One hour each week. Formerly PT 114.*
1 semester hour

PHTH 116 Measures and Interventions for Clinical Problems I (TP/SS only)
First course in the three-course sequence that integrates clinical tests and measures with clinical interventions for common problems encountered in physical therapy care. This course includes tests, measures, and interventions for problems of the integument and non-complex problems of the musculoskeletal system. COREQUISITES: *PHTH 103 and PHTH 105. One hour lecture, two hours laboratory each week. Formerly PT 116.* *2 semester hours*

PHTH 201 Medical Reporting for the Physical Therapist Assistant (TP/SS only)
Principles of medical reporting, including the ability to abstract pertinent information from actual medical records. The writing of patient progress notes in standardized formats and medical terminology is emphasized. Evidence-based practice, clinical research, and justifying interventions based on clinical literature are integrated in the study of medical documentation. An introduction to quality assessment and improvement, fiscal and organizational management is provided. PRE- or COREQUISITES: *English foundation, speech foundation, and mathematics foundation, and consent of program coordinator.* COREQUISITE: *PHTH 106. Two hours lecture/discussion each week. Formerly PT 201.* *2 semester hours*

PHTH 202 Independent Study in Physical Therapist Assistant (TP/SS only)
Through independent study, physical therapist assistant students will conduct research in special topics in physical therapy and rehabilitation technology, professional advancements, and/or case studies. Students will be assigned to a physical therapist assistant faculty member for guidance and supervision. Letter designators in the schedule of classes will distinguish the 1, 2, 3, and 4-credit versions of PHTH 202. COREQUISITE: *Current enrollment in the physical therapist assistant program and consent of program coordinator. Minimum 45 hours of work for each credit hour. Formerly PT 202.* *1-4 semester hours*

PHTH 204 Neurophysiology and Motor Learning (TP/SS only)
In-depth review of neurological physiology, anatomy, and pathology and an introduction to motor control and motor learning throughout the lifespan. Course content will focus on developing sufficient foundational knowledge to work with neurological pathology encountered in physical therapy practice, and with geriatric and pediatric populations. PREREQUISITES: *PHTH 112 and BIOL 212 both with a grade of C or better. Two hours each week. Formerly PT 204.* *2 semester hours*

PHTH 205 Seminar III (TP/SS only)
Third of four seminars dealing with themes of professional issues, core values, and the development of a comprehensive portfolio. These courses will challenge the student to apply professional theme content during standardized patient scenarios and patient simulations. themes for Seminar III: *f*iscal responsibility, Physical Therapist and Physical Therapist Assistant collaboration, and education of patients, families, and others. PREREQUISITE: *PHTH 114. One hour lecture/discussion each week. Formerly PT 205.* *1 semester hour*

PHTH 206 Measures and Interventions for Clinical Problems II (TP/SS only)
Second course in the three course sequence which integrates tests and measures with clinical interventions for common probles encountered in physical therapy care. This course includes tests, measures, and interventions for complex problems of the musculoskeletal and cardiopulmonary systems. Posture awareness training, conditioning and reconditioning, skills training, and plyometrics are discussed. An introduction to post-surgical protocols and return to function and activity are discussed along with aerobic conditioning, changes in vital signs with exercise, breathing patterns, Chest PHTH, and pulmonary function rehabilitation. PREREQUISITE: *PHTH 116. One and one half hour lecture, three hours laboratory each week. Formerly PT 206.* *3 semester hours*

PHTH 215 Seminar IV (TP/SS only)
Capstone seminar dealing with professional issues, core values, and the development of a portfolio. The theme for Seminar IV is career development, continuing professional competence, and social responsibility. Activities completed include national board exam review preparation, job search strategies, resume development, and professional interview skills. PREREQUISITE: *PHTH 205. Two hours each week. Formerly PT 215.*
1 semester hour

PHTH 216 Measures and Interventions for Clinical Problems II (TP/SS only)
Third course in the three-course sequence that integrates clinical tests and measures with clinical interventions for common problems encountered in physical therapy care. This course includes tests, measures, and interventions for problems of the neuromuscular systems. Measures of arousal, mentation, cognition, balance, and motor control are discussed along with the theories and practice of therapeutic exercise interventions for patients with neuromuscular problems across the lifespan from pediatric to geriatric conditions. PREREQUISITE: *PHTH 204. One hour lecture, two hours laboratory each week. Formerly PT 216.*
2 semester hours

PHTH 220 Therapeutic Procedures II (TP/SS only)
Study of advanced technical skills in therapeutic practice. Orthotics and prosthetics, as well as modifying intervention principles for unique populations such as women's health, work injury, elite sports, emerging clinical evidence, and nontraditional therapies will be examined. PREREQUISITE: *PHTH 206.* COREQUISITE: *PHTH 216. One hour lecture, two hours laboratory each week. Formerly PT 220.* *2 semester hours*

PHTH 223 Clinical Practicum I (TP/SS only)
Supervised clinical experience in a physical therapy setting. The student will practice skills learned on actual patients under the supervision and direction of a licensed physical therapist of a licensed physical therapist assistant in a variety of local clinical facilities. PREREQUISITE: *Consent of department. This course consists of 240 hours in a clinical setting. Forty hours each week for six weeks. Formerly PT 223.* *5 semester hours*

PHTH 224 Clinical Practicum II (TP/SS only)
Capstone clinical course consisting of 8 full-time weeks of supervised clinical experience in a physical therapy setting. The student will practice advanced skills learned in the physical therapist assistant curriculum under the supervision and direction of a licensed physical therapist or supervision team of licensed physical therapist and physical therapist assistant. The student will develop entry-level skills in the legal and ethical issues of clinical practice, the measures and interventions required of a clinical population, documentation and progression of patient care, and the comprehensive non-direct patient related skills necessary for the professional role and responsibilities of the entry level physical therapist assistant. PREREQUISITE: *Consent of department. This course consists of 320 hours in a clinical setting, forty hours each week for 8 weeks. Formerly PT 224.*
7 semester hours

PHYS—Physics

PHYS 010 Introduction to Physics
A presentation of the basic concepts necessary for a student to enroll in an introductory college physics course. Topics include problem-solving techniques; application of basic mathematics; power, sinusoidal, exponential, and logarithmic functions; and force, momentum, energy, dimensional analysis, measurement, precision, and estimation. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. One hour lecture, two hours laboratory each week. Formerly PH 010.*
2 semester hours

PHYS 105 Conceptual Physics *(NSND)*
This course introduces fundamental concepts of physics with emphasis on applications to the world around us. The course is concept oriented and does not make extensive use of mathematics. Although the course does not satisfy the requirements of professional or engineering schools, it provides familiarity with basic principles prior to enrolling in other physics courses. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly PH 105.* *3 semester hours*

PHYS 110 Sound and Light in the Arts *(NSLD)* (R only)
Selected topics in sound and hearing; traditional and electronic music; light and vision; lasers and holography; color theory; photography; recording and reproduction of sound and light; the broadcast media. Frequent demonstrations, occasional field trips, and guest lecturers. Laboratory work consists of further exploration of lecture-related topics by individuals or small groups. Projects are encouraged if time permits. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment level: ENGL 101/101A. Three hours lecture, three hours laboratory each week. Formerly PH 110.*
4 semester hours

PHYS 161-262-263 General Physics I, II, and III
A calculus-based general physics course, required for students majoring in engineering or one of the physical sciences.*

PHYS 161 Mechanics and Heat *(NSND)*
Fundamental laws of motion, force and energy, particle collisions, rotational mechanics, gravitation, thermodynamics, and kinetic theory. PREREQUISITES: *MATH 181 and concurrent enrollment in MATH 182, or consent of department. Three hours lecture, one hour discussion each week. Formerly PH 161.* *3 semester hours*

PHYS 262 Electricity and Magnetism *(NSLD)*
Coulomb's Law, electric fields, Gauss' Law, direct current and alternating current circuits, magnetic fields, the laws of Ampere and Faraday, and electromagnetic waves. Laboratory exercises also develop familiarity with electrical measuring instruments. PREREQUISITES: *A grade of C or better in both PHYS 161 and MATH 182 and concurrent enrollment in MATH 280 or MATH 282, or consent of department. Three hours lecture, three hours laboratory, one hour discussion each week. Formerly PH 262.*
4 semester hours

PHYS 263 Waves, Optics, and Modern Physics *(NSLD)*
Physical and geometrical optics, quantum mechanics, selected topics in nuclear physics, solid state physics, and related fields. PREREQUISITE: *A grade of C or better in PHYS 262 or consent of department. Three hours lecture, three hours laboratory, one hour discussion each week. Formerly PH 263.*
4 semester hours

PHYS 203-204 General Physics I and II (non-engineering) *(NSLD)*
Fundamental concepts and laws of physics with emphasis on principles and development of scientific methods applied to physical relationships. Less emphasis is placed on mathematics than in PHYS 161-262-263, and concurrent enrollment in calculus courses is, therefore, not required. This course includes topics such as mechanics, heat, sound, electricity and magnetism, light, and modern physics. Credit is given for the successful completion of PHYS 203 whether PHYS 204 is taken or not. PREREQUISITES: *PHYS 203 whether PHYS 204 and knowledge of trigonometry, or consent of department. Assessment levels for PHYS 203: ENGL 101/101A, MATH 093/096, AELR 930/READ 099. Three hours lecture, four hours laboratory/ discussion each week. Formerly 203–204.* *4-4 semester hours*

PHYS 233 Physics for the Life Sciences I
The first part of a two-semester course in general physics specifically oriented towards applications relevant for students in biology and pre-medical programs. The course covers basic mechanics including forces and energy, properties of matter, and thermodynamics done in authentic biological contexts. PREREQUISITES: *MATH 181, BIOL 150, BIOL 151, and CHEM 101, or consent of department.* COREQUISITE: *MATH 182. Three hours lecture, four hours laboratory/discussion each week.*
4 semester hours

PHYS 234 Physics for the Life Sciences II
The second part of a two-semester course in general physics specifically oriented towards applications relevant for students in biology and pre-medical programs. The course covers basic mechanics including forces and energy, properties of matter, and thermodynamics done in authentic biological contexts. PREREQUISITE: *PHYS 233 or consent of department. Three hours lecture, four hours laboratory/discussion each week.* *4 semester hours*

POLI—Political Science

POLI 101 American Government *(BSSD)* **CE-TP/SS**
Structure, powers, and processes of the American political system: executive, legislative, and judicial branches; civil liberties, federalism, democratic patterns and backgrounds, public opinion, pressure group politics, political parties, constitutional mechanisms, and administrative establishment; foreign and domestic policy. Emphasis on national level. *Assessment levels: ENGL 101/ 101A, READ 120. Three hours each week. Formerly PS 101.*
3 semester hours

POLI 105 Introduction to Political Science *(BSSD)*
Basic principles and concepts of political science. Scope and methods of political science, nature and purposes of the state; government, its organization and functions; politics, elections, parties, pressure groups, international relations, and political thought. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly PS 105.*
3 semester hours

POLI 203 International Relations *(BSSD[M])* CE-R
Critical analysis of international problems. A survey of the concepts and problems of sovereignty and nationalism as well as the successes and failures of international institutions and organizations. Special attention given to the role of the United Nations in today's world and to contemporary situations that affect world politics. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly PS 203. 3 semester hours*

POLI 206 Political Ideologies *(BSSD[M])*
A survey and analysis of leading ideologies of the modern world such as anarchism, nationalism, fascism and national socialism, classical liberalism and conservatism, Fabian socialism, Marxism-Leninism, and liberal democracy. Some consideration of current extremist ideologies of both left and right. Examination of the nature and function of ideologies in political movements and in governance. *Assessment levels: ENGL 101/ 101A, READ 120. Three hours each week. Formerly PS 121.*
3 semester hours

POLI 211 Comparative Politics and Governments *(BSSD[M])* CE-R
This course introduces students to the comparative study of politics and governments. Topics include political culture, participation, government structures, and public policies. The course compares historical processes and current issues facing countries domestically and internationally. Selected countries from both the developed and developing worlds illustrate broader concepts and provide practice in comparative political analysis. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly PS 201. 3 semester hours*

POLI 221 Western Political Thought *(BSSD)*
Surveys Western political thought from Plato to Foucault. The course critically examines the contributions of political theorists both ancient and modern, especially major ideas that have shaped modern democratic societies. The course also explores challenges posed by Marxist, feminist, and postmodern theorists and focuses on values and concepts that underlie political discourse: power, legitimacy, change, freedom, equality, and justice. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly PS 241.*
3 semester hours

POLI 230 Introduction to International Conflict Resolution
Introduction to the design, management, theory, and analysis of international conflict. The course explores the nature of international conflict and the combination of psychological, social, anthropological, political, and legal strategies that can be used to resolve such conflict. *Assessment levels: ENGL 101/101A, READ 120. Formerly PS 250.*
3 semester hours

POLI 242 State and Local Government *(BSSD)* **CE-TP/SS**
Powers, organization, and functions of state and local governments; case studies. Emphasis on the governments of the state of Maryland and of Montgomery County. *Assessment levels: ENGL 101/ 101A, READ 120. Three hours each week. Formerly PS 102.* *3 semester hours*

Courses designated with an M after the name fulfill the General Education global and cultural perspectives requirement.
Common course outcomes for most courses can be found online at www.montgomerycollege.edu/courses.

POLI 252 Race and Ethnicity in U.S. Politics *(BSSD[M])*
Examines the role of race/ethnicity in the American political system. Themes discussed include the social construction of race; the concept of racial hierarchy; racial/ethnic origins of political institutions (e.g., the Constitution); minority representation; the relationship among race, racism, and public/foreign policy; immigration and citizenship; and the role of race in campaigns. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly PS 210.* *3 semester hours*

POLI 256 Politics of the Developing World *(BSSD[M])* (R only)
Explores the domestic, regional, and international politics of the developing world. The course covers political institutions; processes; challenges common to many states in Africa, Asia, Latin America, and the Middle East; and regional differences. Topics include colonialism, the environment, development, nationalism, democratization, and globalization. *Assessment levels: ENGL 101/ 101A, READ 120. Three hours each week. Formerly PS 282.*
3 semester hours

POLI 270 Politics in Action CE: R
A fieldwork course in politics. Approximately one-half of the semester is devoted to an activity such as preparing a legislative proposal, monitoring the progress of a bill, lobbying, or campaigning; the other half of the semester is spent in research, report writing, and seminar-style presentation and discussion of individual fieldwork projects. *Assessment levels: ENGL 101/101A, READ 120. Hours per week vary. Formerly PS 260.*
3 semester hours

PORT—Portuguese

PORT 101 Elementary Portuguese I *(HUMD[M])*
This beginning language course focuses on the study of Portuguese language and Lusophone culture. Students begin to develop the ability to communicate in Portuguese through the consideration of cultural themes, language functions, and authentic situation as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of Portuguese is required. *In-class work is supplemented by 20 hours in the language learning laboratory. Three hours each week. Formerly PU 101.*
3 semester hours

PORT 102 Elementary Portuguese II *(HUMD[M])*
A continuation of PORT 101, this beginning language courses focuses on the study of Portuguese language and Lusophone culture. Students continue their study of written language, conversation, and composition as they consider cultural themes, language functions, and authentic situations. PREREQUISITE: *PORT 101 or consent of department. In-class work is supplemented by 20 hours in the language learning laboratory. Three hours each week. Formerly PU 102.* *3 semester hours*

POSM—Polysomnography

POSM 101 Anatomy and Physiology for Polysomnography (TP/SS only)
Detailed study of the integrated structure and function of the cardiopulmonary and neuromuscular systems as they relate to sleep pathology. The origin and interpretation of the electrical signals generated throughout the body that reflect states of awareness and sleep are introduced. Structural and physiological control of breathing and physiological manifestations of respiratory disorders that affect sleep are discussed. PRE- or COREQUISITES: *CMAP 120, HINM 126, PSYC 102 and consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours lecture, three hours laboratory each week. Formerly PO 101.*
4 semester hours

POSM 102 Introduction to Polysomnography (TP/SS only)
An introduction to the profession of sleep medicine and the roles and responsibilities of the polysomnographic technologist. Therapeutic communication skills, patient assessment, and legal/ethical considerations of medical records and patient care are studied from a multicultural perspective. Evidence-based practice models are introduced. PREREQUISITES: *POSM 101 and consent of department.* COREQUISITES*: POSM 103, POSM 104, and POSM 105. Three hours each week. Formerly PO 102.*
3 semester hours

POSM 103 Sleep Disorders (TP/SS only)
A comprehensive study of sleep disorders inclusive of a comparison of the normal sleep architecture with that of the more common sleep and arousal disorders. Included are the relationships of physical and psychiatric disorders and the effects of various medications on sleep patterns and electrophysiological manifestations on the polysomnogram. PREREQUISITES: *POSM 101 and consent of department.* COREQUISITES*: POSM 102, POSM 104, and POSM 105. Three hours each week. Formerly PO 103.* *3 semester hours*

POSM 104 Polysomnography I (TP/SS only)
An introduction to the theory and practice of polysomnography. Preparation of patients and equipment, as well as equipment selection, for the desired testing procedures will be discussed. Instrumentation and refinement of tracings via EEG, EOG, ECG, and EMG will be introduced. PREREQUISITE: *Consent of department.* COREQUISITES: *POSM 102, POSM 103, and POSM 105. Two hours lecture, three hours laboratory each week. Formerly PO 104.* *3 semester hours*

POSM 105 Clinical Practicum I (TP/SS only)
A supervised introductory clinical practicum in area sleep laboratories. Students apply the concepts learned in POSM 104 and other courses as they interview patients, explain procedures, attach polysomnography equipment to patients, and perform basic polysomnographic studies under the watchful eyes of preceptors and faculty. PREREQUISITE: *Consent of department.* COREQUISITES: *POSM 102, POSM 103, and POSM 104. Nine hours practica each week. Formerly PO 105.* *3 semester hours*

POSM 201 Polysomnography II (TP/SS only)
Advanced theory and practice of polysomnography. Includes advanced monitoring techniques such as bi-level PAP, parasomnia, and seizure investigation. Emphasis is placed on obtaining and scoring a quality polysomnogram. PREREQUISITES: *POSM 104, POSM 105, or consent of department.* COREQUISITE: *POSM 202. Three hours lecture, three hours laboratory each week. Formerly PO 201.* *4 semester hours*

POSM 202 Clinical Practicum II (TP/SS only)
The final clinical course before completion of the certificate and application for licensure. Students have supervised practice in area sleep centers to practice the full realm of sleep diagnostic testing. PREREQUISITES: *POSM 104, POSM 105, or consent of department.* COREQUISITE: *POSM 201. Twelve hours practica each week. Formerly PO 202.*
4 semester hours

PRNT—Printing Technology

PRNT 125 Introduction to QuarkXPress (R only)
This course offers an introduction to the page layout and design application QuarkXPress. Topics include tools and procedures used for creating page elements, procedures for document construction, importing graphics and text, use of spot colors, color builds, and color separations for print production. Additional topics may include an introduction to use of an imagesetter, color proofing procedures, trapping, and preflighting. PREREQUISITE: *None, but previous computer experience recommended. Four hours each week. Formerly PR 130.* *4 semester hours*

PRNT 131 Photoshop Digital Production for Printing and Publishing I (R only)
Entry-level course using Adobe Photoshop production techniques to process digital images for printing and publishing. Students color correct digital images for printing, web publishing, and other electronic media. Topics include retouching, sharpening, and color management. Prepare images for printing on desktop printers, printing presses, and high-resolution digital printing equipment. *Four hours each week. Formerly PR 131.*
4 semester hours

PRNT 141 Illustrator Print Production (R only)
Technical production course using Adobe Illustrator to prepare and correct vector files for high-resolution print output. Students produce basic vector files and correct pre-existing files for efficient print processing. Topics include color separation, trapping, and preflight file preparation in a print production workflow. PREREQUISITE: *None, but previous computer experience recommended. Four hours each week. Formerly PR 141.*
4 semester hours

Courses designated with an M after the name fulfill the General Education global and cultural perspectives requirement.
Common course outcomes for most courses can be found online at www.montgomerycollege.edu/courses.

PRNT 171 Electronic Publishing I
(R only)
Designed to expose students to the latest program for document layout and digital page assembly. The course will introduce students to electronic publishing, principles of typography, and page design elements used by professional electronic publishers, and other professionals. Topics include creation, manipulation and application of images, illustrations, art, and type to create flyers, newsletters, brochures, and magazines for reproduction on different types of output devices. Students will also learn how to create e-books. Please check schedule for current software taught. *Four hours each week. Formerly PR 171.* *4 semester hours*

PRNT 232 Photoshop Digital Production for Printing and Publishing II
(R only)
Advanced course using Adobe Photoshop production techniques. Students use advanced masking techniques with professional color correction to process digital images to meet the needs of the printing and publishing industry. Images will be output to high-resolution digital proofing and printing equipment. PREREQUISITE: *PRNT 131 or consent of department. Four hours each week. Formerly PR 232.* *4 semester hours*

PRNT 272 Electronic Publishing II
(R only)
Continuation of PRNT 171. Students will broaden their skills in the creation of electronic page assembly by learning how to use advanced features of the page assembly software application. Topics include but not limited to: fine-tuning of documents such as spacing, alignment, file formatting, color management, imposition, trapping, color separations, and exporting. PREREQUISITE: *PRNT 171 or consent of department. Four hours each week. Formerly PR 272.* *4 semester hours*

PSCI—Physical Science

PSCI 101, 102 Physical Science I and II
(NSLD) **CE-R** and TP/SS
A general course in the physical sciences to help the student understand the physical aspects of the environment. Development of a broad general understanding of basic scientific concepts for non-science majors and some familiarity with scientific materials, equipment, laboratory techniques, and procedures. Emphasizes the principles of physics, chemistry, geology, meteorology, and astronomy. *Assessment levels: ENGL 101/101A, MATH 093/096. For each course, two hours lecture, two hours laboratory, two hours discussion each week. Formerly PC 101, 102.* *4-4 semester hours*

PSYC—Psychology

PSYC 102 General Psychology *(BSSD)*
Introduction to the fields and research methods of psychology, including such topics as biological bases of behavior, human development, perception, learning, mental disorder, and social behavior. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly PY 102.* *3 semester hours*

PSYC 203 Human Growth and Development During the Life Span
Studies the life span; data, concepts, theories, and methods of contemporary psychology by focusing on the physical, intellectual, and social development of human behavior from conception through late adulthood. PREREQUISITE: *A grade of C or better in PSYC 102, or consent of department. Three hours each week. Formerly PY 203.* *3 semester hours*

PSYC 204 Introduction to the Psychology of Personality
An introduction to the psychology of human personality including topics such as personality theories, adjustment, personality description, and assessment. PREREQUISITE: *A grade of C or better in PSYC 102, or consent of department. Three hours each week. Formerly PY 204.* *3 semester hours*

PSYC 206 Psychology of Human Sexuality
An introduction to the study of the psychology of human sexuality including the study of human sexual behavior, sexual attitudes, sexual motivation, sex roles, relation between sexual behavior and attitudes and personality characteristics, sexual variance, sexual problems, etc. PREREQUISITE: *A grade of C or better in PSYC 102, or consent of department. Three hours each week. Formerly PY 206.*
3 semester hours

PSYC 207 Psychology of Women
An introduction to the issues and research in the psychology of women. Topics include biological and social factors, gender roles, sex differences and similarities, mental health, pregnancy, menstruation, menopause, work, women of color, love relationships, and sexuality. PREREQUISITE: *A grade of C or better in PSYC 102, or consent of department. Three hours each week. Formerly PY 207.*
3 semester hours

PSYC 211 Social Psychology
An introduction to the field of social psychology emphasizing the experimental and the experiential approach. Various theoretical orientations and relevant research are considered covering such topics as group structures and group processes, formation, measurement and changing of attitudes (including prejudice), communication and persuasion, leadership, interpersonal relations, and social influence. PREREQUISITE: *A grade of C or better in PSYC 102, or consent of department. Three hours each week. Formerly PY 211. 3 semester hours*

PSYC 213 Criminal and Legal Psychology
Aspects of psychology that specifically relate to police work. Applications of current research about law enforcement, juvenile behavior, and witness credibility. Special police problems, including the relation of mental illness and mental retardation to crime. PREREQUISITE: *A grade of C or better in PSYC 102, or consent of department. Three hours each week. Formerly PY 213. 3 semester hours*

PSYC 215 Child Psychology
Emotional, intellectual, social, physiological, and cognitive growth of the child based on pertinent psychological principles, research findings, and methodology. Critical periods in maturation and learning. PREREQUISITE: *A grade of C or better in PSYC 102, or consent of department. Three hours each week. Formerly PY 215. 3 semester hours*

PSYC 216 Adolescent Psychology
The interaction of physical, intellectual, emotional, and environmental forces as they influence the psychological functioning of the adolescent. Theories and research findings as they relate to adolescent adjustment. PREREQUISITE: *A grade of C or better in PSYC 102, or consent of department. Three hours each week. Formerly PY 216.*
3 semester hours

PSYC 221 Introduction to Abnormal Psychology
Provides an introduction to and understanding of behavior disorders and insight into the personality of the disturbed person. Symptoms, contributing factors, treatment, diagnosis, and classification of the mentally ill and the mental defective, as well as the maladjusted person, will be studied. Roles of various members of the mental health team in the prevention, analysis, and rehabilitation of disturbed individuals will be discussed. PREREQUISITE: *A grade of C or better in PSYC 102, or consent of department. Three hours each week. Formerly PY 221. 3 semester hours*

PSYC 224 Cultural Psychology
Study of psychological principles, theory, and research through exploration of cultural differences and similarities, both within and across cultures. Topics include the interplay between culture and developmental processes, cognition, emotion, communication, gender, personality development, psychopathology, and social behavior. PREREQUISITE: *A grade of C or better in PSYC 102, or consent of department. Three hours each week. Formerly PY 224. 3 semester hours*

PSYC 227 Educational Psychology
Studies the principles of psychology that relate to the teaching-learning process. Topics include theories of learning and cognitive development, motivation, methods and media of instruction, individual differences, measurement, and evaluation. PREREQUISITE: *A grade of C or better in PSYC 102, or consent of department. Three hours lecture/discussion each week. Formerly PY 227. 3 semester hours*

RADT—Radiologic (X-Ray) Technology

RADT 101 Radiologic Technology I
(TP/SS only)
An introductory course to the science of medical radiographic exposure techniques. Topics such as X-ray formation, X-ray interaction with matter, components necessary for image formation, automatic processing, densitometry, radiation protection, scatter radiation, factors controlling scatter radiation, digital/computed radiology, and mobile radiography will be covered. In addition, basic atomic structure and fundamental physics will be covered at the start of the course to ensure the student has a basic foundation upon which to build. PREREQUISITE: *Admission to the radiologic (x-ray) technology program or consent of program coordinator.* PRE- or COREQUISITES: *RADT 111, and RADT 120. Mathematics foundation. Assessment levels: ENGL 101/101A, READ 120. Three hours lecture, two hours laboratory each week. Formerly RT 101.*
4 semester hours

RADT 102 Radiologic Technology II
(TP/SS only)
A continuation of RADT 101 with the presentation of more complex theories to further the knowledge of the student. A correlated laboratory will aid the student in synthesizing the material presented in class. Topics covered will be radiation safety and protection, X-ray machinery circuitry and design, analysis of common machine malfunctions and simple repairs, digital and computed radiography, and fluoroscopy. In addition, basic electronic theory will be presented so that the student will be able to understand the different circuits and functions of the circuits in modern X-ray. PREREQUISITES: *A grade of C or better in mathematics foundation and RADT 101, or consent of program coordinator.* COREQUISITES: *RADT 112, and RADT 124. Three hours lecture, two hours laboratory each week. Formerly RT 102.*
4 semester hours

RADT 111 Radiographic Positioning I
(TP/SS only)
Covers knowledge and skills necessary to produce quality radiographs. Students relate the theoretical concepts to actual laboratory demonstration for the chest, abdomen, upper and lower extremities. Students develop and demonstrate appropriate positioning, technical and communication principles. Supplemental radiographic views and adjustments necessary to compensate for patient and pathological limitations are introduced. PREREQUISITE: *RADT 119 or consent of program coordinator.* COREQUISITES: *RADT 101 and RADT 120. Two hours lecture, two hours laboratory each week. Formerly RT 111.*
3 semester hours

RADT 112 Radiographic Positioning II
(TP/SS only)
Theoretical concepts and actual laboratory demonstration for the contrast studies of the urinary and digestive tracts, femur, pelvis, and complete spine. The essentials of contrast media, contrast reactions, venipuncture, and surgical procedures are studied, and skills specific to these objectives are performed in a simulated environment. Students continue to develop and demonstrate appropriate positioning, technical and communication principles. Supplemental radiographic views and adjustments necessary to compensate for patient and pathological limitations are discussed. PREREQUISITE: *RADT 111 or consent of program coordinator.* COREQUISITES: *RADT 102 and RADT 124. One hour lecture, two hours laboratory each week. Formerly RT 112.*
2 semester hours

RADT 119 Clinical Radiology I
(TP/SS only)
Provides the radiology student with the clinical instruction essential to the actual practice of radiography. As an introduction to the medical profession, this course explores radiology's role in health care. Patient care, vital signs, sterile and aseptic technique, transportation and transfer skills, legal and ethical responsibilities, and critical thinking skills appropriate for the radiology department are covered. Interpersonal, communication, and diversity skills necessary to interact with patients, peers, and other professionals are addressed. General anatomy, terminology, and positioning principles related to the chest are introduced. Twelve hours of clinical observation at an assigned clinical affiliate are required. PREREQUISITE: *Admission into the program or consent of program coordinator. Assessment levels: ENGL 101/101A, MATH 110 or higher. Two hours lecture, two hours laboratory each week. Formerly RT 119.*
3 semester hours

RADT 120 Clinical Radiology II
(TP/SS only)
Provides the inexperienced first year radiologic technology student with the clinical instruction essential to the actual practice of radiography. Students attend an assigned clinical affiliate to observe and participate in the completion of radiographic exams on actual patients under the direct/indirect supervision of a professional radiographer. Students are exposed to radiographic examinations in the areas of general radiography, fluoroscopy, portable radiography, and support areas. The student develops technical, patient care, radiation protection, communication, and critical thinking skills. The student must complete 240 clinical hours to successfully complete this course. PREREQUISITE: *RADT 119 or consent of program coordinator.* COREQUISITES: *RADT 101 and RADT 111. Formerly RT 120.*
3 semester hours

RADT 124 Clinical Radiology III
(TP/SS only)
Covers clinical instruction essential to the applied practice of radiography. Students attend an assigned clinical affiliate to observe and participate in the completion of radiographic exams on actual patients under the direct/indirect supervision of a professional radiographer. In this competency-based program students are assessed in their performance of radiographic examinations in the areas of general radiography, fluoroscopy, and portable radiography. Specialized rotations introduce students to the operating room. The student must complete 240 hours to successfully complete this course. PREREQUISITES: *RADT 101, RADT 111, RADT 120 or consent of program coordinator.* COREQUISITES: *RADT 102, RADT 112. Formerly RT 124.*
3 semester hours

RADT 125 Clinical Radiology IV
(TP/SS only)
Covers clinical instruction essential to the applied practice of radiography. Students attend an assigned clinical affiliate to observe and participate in the completion of radiographic exams on actual patients under the direct/indirect supervision of a professional radiographer. Students demonstrate competence in their performance of radiographic examinations in the areas of general radiography, fluoroscopy, and portable radiography. Specialized rotations offer the student an opportunity to develop competence in the areas of the operating room, and pediatrics. The student must complete 400 hours to successfully complete this course. PREREQUISITE: *RADT 124 or consent of program coordinator. Formerly RT125.*
4 semester hours

RADT 200 Independent Study in Radiologic Technology
(TP/SS only)
Provides an opportunity to conduct research in cutting edge Radiologic Technology procedures, professional advancements, and/or case studies. Students will be assigned to Radiologic Technology Faculty for guidance and supervision. For those students where intensive review to prepare for the National Registry is required, students will be assigned to Radiologic Technology Faculty for guidance and supervision. Letter designators in the schedule of classes will distinguish the 1, 2, 3, and 4-credit versions of RADT 200. COREQUISITE: *Current enrollment in the Radiography program or consent of program coordinator. Minimum 45 hours of work for each credit hour. Formerly RT 200.* *1-4 semester hours*

RADT 206 Radiologic Technology III
(TP/SS only)
Introduction to radiobiology and pathology. The effect of radiation on human biology, the history of human and experimental exposures to radiation, and the calculations of effects of radiation are covered. Radiation therapy as it relates to radiobiology is introduced. Quality assurance and quality control are reviewed. Identification of pathologies commonly diagnosed or monitored by various imaging modalities (computed tomography, MRI, ultrasonography, nuclear medicine scan, PET CT) is presented. PREREQUISITE: *RADT 102 or consent of program coordinator.* COREQUISITES: *RADT 211 and RADT 224. Three hours each week. Formerly RT 206.*
3 semester hours

RADT 207 Radiologic Technology IV
(TP/SS only)
Advanced radiographic modalities, procedures and equipment. Advanced contrast studies including angiography, interventional studies, ERCP, arthrography, myelography, venography, genitourinary system studies (including mammography) and biliary system studies are covered. In-depth instruction in cross-sectional anatomy and the components of computed tomography imaging are presented. Review of the anatomical structures of the major body systems is included. Pediatric radiography is presented. PREREQUISITE: *RADT 206 or consent of program coordinator.* COREQUISITES: *RADT 225 and RADT 240. Three hours each week. Formerly RT 207.*
3 semester hours

RADT 211 Radiographic Positioning III
(TP/SS only)
Covers knowledge and skills necessary to produce quality radiographs. Students relate theoretical concepts to actual laboratory demonstration for the bony thorax, skull and facial bones. Students continue to develop and demonstrate appropriate positioning, technical and communication principles. Supplemental radiographic views and adjustments necessary to compensate for patient and pathological limitations are discussed. PREREQUISITE: *RADT 112 or consent of program coordinator.* COREQUISITES: *RADT 206 and RADT 224. One hour lecture, two hours laboratory each week. Formerly RT 211.* *2 semester hours*

RADT 224 Clinical Radiology V
(TP/SS only)
Clinical instruction essential to the actual practice of radiography. Students are assigned a new clinical affiliate to observe and participate in the completion of more complex radiographic exams on actual patients under the direct/indirect supervision of a professional radiographer. In this competency-based course, students demonstrate competency in their performance of advanced radiographic examinations in the areas of general radiography, fluoroscopy, and portable radiography. Specialized rotations offer the student an opportunity to develop competency in the areas of the operating room and pediatrics. Students must complete 360 hours to successfully complete this course. PREREQUISITE: *RADT 125 or consent of program coordinator.* COREQUISITES: *RADT 206 and RADT 211. Formerly RT 224.* *3 semester hours*

RADT 225 Clinical Radiology VI
(TP/SS only)
Provides clinical instruction essential to the actual practice of radiography. Students continue to attend an assigned clinical affiliate to participate in the completion of radiographic exams on actual patients under the direct/indirect supervision of a professional radiographer. In this competency-based course students demonstrate expertise in their performance of basic and advanced radiographic examinations in the areas of general radiography, fluoroscopy, operating room, pediatrics, and portable radiography. Students observe advanced modalities, including computed tomography. The student must complete 360 hours to successfully complete this course. PREREQUISITE: *RADT 224 or consent of program coordinator.* COREQUISITES: *RADT 207 and RADT 240. Formerly RT 225.*
3 semester hours

RADT 240 Radiologic Technology V
(TP/SS only)
Professional entry into the diagnostic medical imaging career. Resume writing and job interviewing skills, certification examination preparation, test-taking strategies, and comprehensive review of content specifications of the certifying exam are presented to the student for successful entry into the diagnostic imaging profession as a graduate radiographer. PREREQUISITES: *RADT 206 and RADT 224.* COREQUISITES: *RADT 207 and RADT 225, or consent of program coordinator. Two hours each week. Formerly RT 240.* *2 semester hours*

READ—Reading

READ 095 College Reading Skills I
The first-level reading course designed for native speakers of English. The emphasis is on intermediate college reading skills required for success in content courses. Skills cover using dictionaries; enhancing vocabulary, including identifying context clues; comprehending paragraphs and essays through identifying and inferring main ideas, locating supporting details, and identifying organizational patterns; using reading strategies and study skills such as test taking and listening skills; and introducing critical thinking skills. Upon successful completion, students will advance to READ 099/READ 120 per discipline guidelines. PREREQUISITE: *Accuplacer score between 53 and 65. For computation of tuition, this course is equivalent to five semester hours. Five hours per week plus additional reading laboratory requirements. Formerly RD 095.*
No credit/No quality points

READ 099 College Reading Skills II
The second-level reading course designed for native speakers of English. The emphasis is on advanced college reading skills required for success in content courses. Skills cover comprehending college-level essays through indentifying and inferring main ideas, locating supporting details, and identifying organizational patterns; applying reading strategies and study skills such as SQ4R, outlining, summarizing; using critical thinking skills, including differentiating fact from opinion and recognizing purpose and tone; and analyzing textbooks and media. PREREQUISITE: *Successful completion of READ 095 or appropriate reading level score on placement test. For computation of tuition, this course is equivalent to three semester hours. Three hours each week plus additional reading laboratory requirements. Formerly RD 099.*
No credit/No quality points

READ 120 Reading and Study in College Content Areas

A credit course designed to develop reading skills in content areas. The emphasis is on the transfer and practical application of previously learned reading and study skills to text and visual material commonly assigned in college course work. Instructional materials are field-specific. Skill development focuses on literal and inferential comprehension, critical thinking, and study methods. The course is recommended as an option for students enrolled in entry-level courses but required of READ 095 students who do not take READ 099. PREREQUISITE: *READ 099 or AELR 930; or appropriate reading level score on the assessment test, or completion of READ 095 with an A and an ENGL 101/101A assessment level for English and consent of department.* COREQUISITE: *Enrollment in a credit-level content course. Three hours each week supplemented with laboratory requirements. Formerly RD 120.* *3 semester hours*

READ 238 Methods of Teaching Reading in the Secondary Content Areas, Part I

This course, designed for current and prospective secondary educators, covers the essentials of the reading processes necessary for secondary students to become proficient readers. Students will investigate five areas: types of reading, assessment, reading skills, reading instruction, and motivation for reading. This course meets the Maryland State Department of Education's reading requirement for secondary educators. PREREQUISITE: *Successful completion of one year of college-level English, or consent of department. Formerly RD 238.* *3 semester hours*

READ 239 Methods of Teaching Reading in the Secondary Content Areas, Part II

This course, designed for current and prospective secondary educators, focuses on teaching secondary students to learn from text. Students will apply theories, strategies, and practices in classroom lessons. The course introduces three areas: types of reading, reading skills, and instruction that integrates content with reading goals. This course meets the Maryland State Department of Education's reading requirement for secondary educators. PREREQUISITE: *READ 238 or consent of department. Formerly RD 239.* *3 semester hours*

RUSS—Russian

RUSS 101 Elementary Russian I *(HUMD[M])*

A beginning language course focusing on the study of Russian language and culture. Students begin to develop the ability to communicate in Russian through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of Russian is required. *In-class work is supplemented by 20 hours in the language learning laboratory. Three hours each week. Formerly RU 101.* *3 semester hours*

RUSS 102 Elementary Russian II *(HUMD[M])*

A continuation of RUSS 101. Students continue their study of written language, conversation, and composition as they consider cultural themes, language functions, and authentic situations. PREREQUISITE: *RUSS 101 or consent of department. In-class work is supplemented by 20 hours in the language learning laboratory. Three hours each week. Formerly RU 102.* *3 semester hours*

RUSS 201 Intermediate Russian I *(HUMD[M])*

Focuses on the study of Russian language and culture at the intermediate level. Students further their ability to communicate in Russian through an advanced consideration of cultural themes and a review of Russian grammar to support an increased focus on reading and composition. PREREQUISITE: *RUSS 102 or consent of department. In-class work is supplemented by 10 hours in the language learning laboratory. Three hours each week. Formerly RU 201.* *3 semester hours*

RUSS 202 Intermediate Russian II *(HUMD[M])*

A continuation of RUSS 201. Students further their ability to communicate in Russian through an advanced consideration of cultural themes and a review of Russian grammar to support an increased focus on reading and composition. PREREQUISITE: *RUSS 201 or consent of department. In-class work is supplemented by 10 hours in the language learning laboratory. Three hours each week. Formerly RU 202.* *3 semester hours*

SCIR—Scientific Research

SCIR 297 Fundamentals of Scientific Research I

Designed for the promising science, engineering, or mathematics (SEM) student who would like to build upon general SEM skills learned from general courses in order to generate competency in scientific critical thinking and research. This course enables SEM students to pursue research topics of their own choosing with the guidance and supervision of an assigned faculty member. Students should have a strong interest in SEM and be committed toward completion of a multi-semester and interdisciplinary-spanning research project. Projects will not duplicate curriculum content, but will expand on that content. PREREQUISITES: *A minimum GPA of 3.0; BIOL 150, CHEM 131, MATH 165, and approval of instructor. May be repeated for a maximum of 6 credits with consent of department. One hour discussion, three hours laboratory each week. Formerly SC 297.* *2 semester hours*

SOCY—Sociology

SOCY 100 Introduction to Sociology *(BSSD[M])*

An exploration of fundamental sociological concepts, methods, and theories used to interpret the patterns of human society. Emphasis is placed on the connection between theory and practice in examining social interaction, cultural diversity, social structure, and global issues. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly SO 101.* *3 semester hours*

SOCY 105 Social Problems and Issues *(BSSD[M])*

An analysis of social problems such as social inequality, urbanization, crime, demographic change, terrorism and environmental issues. Sociological theory and research are used to examine the impact of globalization, culture, institutions, ideology, social policy, and social movements on various societal issues. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly SO 105.* *3 semester hours*

SOCY 110 Families in Crisis

The consideration of family interaction patterns, institutional structures, and global forces as stressors relating to families experiencing crisis. Social and cultural variables that impact families, as well as contextual and diverse aspects of crisis events and outcomes, will be examined. PREREQUISITE: *SOCY 100 or consent of department. Three hours each week. Formerly SO 104.* *3 semester hours*

SOCY 200 Criminology

An exploration of the fundamental concepts, methods, and theories used in the scientific study of the nature, patterns, extent, cause, and control of crime and criminal behavior nationally and internationally. Emphasis is on the integrative relationship between theory, research, and social policy. PREREQUISITE: *SOCY 100 or consent of department. Three hours each week. Formerly SO 107.* *3 semester hours*

SOCY 208 Sociology of Gender *(BSSD[M])*

Examines the social production and reproduction of gender relations in social institutions such as family, education, law, work, and media using comparisons with other cultures. The intersectionality of gender, race, social class, and global inequality will be critically analyzed. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly SO 108.* *3 semester hours*

SOCY 211 Introduction to Community Fieldwork (R only)

Practical application of the understanding, theories, and methodology of the social sciences through the encouragement of student involvement and participation in community service agencies. An interdisciplinary approach aimed at coordinating social science knowledge with fieldwork experience. PREREQUISITE: *ANTH 201 or SOCY 100. One hour lecture, minimum of four hours weekly fieldwork participation and periodic conferences. Formerly SO 201.* *3 semester hours*

SOCY 214 Sociology of the Family
(BSSD[M])
Examines patterns and trends in family structures and family dynamics. Partner selection, marital/partner roles, family interaction and parenting patterns will be identified. Social and cultural variables that diversify families, as well as societal and global forces which impact families, will be analyzed. PREREQUISITE: *ANTH 101, SOCY 100 or consent of department. Three hours each week. Formerly SO 204.*
3 semester hours

SOCY 230 Sociology of Personality
A social psychological study of the development of human nature and personality, mind, and self as products of social interaction. The role of language as fundamental in the symbolic process is stressed as this relates to personality development and behavior motivation. PREREQUISITE: *PSYC 102, SOCY 100, or consent of department. Three hours each week. Formerly SO 206.* *3 semester hours*

SOCY 233 Race and Ethnic Relations
(BSSD[M])
An analysis patterns of intergroup relations in contemporary society. Theories and concepts of racial/ethnic hierarchies, the intersection of race/ethnicity with class and gender, and the place of race/ethnicity in the global systems of stratification are critically considered. PREREQUISITE: *ANTH 201, SOCY 100 or consent of department. Three hours each week. Formerly SO 208.* *3 semester hours*

SOCY 240 Sociology of Age and Aging
(BSSD[M])
An introduction of aging studies focused on social aspects. Demographic, social, and economic changes with the aging population will be examined using comparisons with different societies. Theories of aging and their applications are introduced. Relevant social policies on aging will be critically evaluated. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly SO 210.*
3 semester hours

SOCY 243 The Sociology of Sport
(BSSD[M]) (R only)
The application of basic sociological concepts, theories, and research to the analysis of contemporary sport. Emphasis will be placed on how sport influences and is influenced by social groups, culture, institutions, social inequalities, and global expansion. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly SO 212.*
3 semester hours

SOCY 246 Sociology of Religion
An analysis of structures and functions of world religions in societal and global settings. This course examines religion in relationship to fundamentalism, globalization, nationalism, multiculturalism and religiously grounded violence. It considers the impact of religious trends on individuals, groups and societies. PREREQUISITE: *ANTH 201 or SOCY 100 or consent of instructor. Three hours each week. Formerly SO 213.* *3 semester hours*

SOCY 250 Globalization Issues
(BSSD[M])
An exploration of social forces contributing to global inequalities and the dynamics of global patterns (immigration, refugees, displaced persons, social conflict, health/environmental issues, and social movements). Students examine consequences of global forces and their effects on institutions and individuals. PREREQUISITE: *ANTH 201 or SOCY 100 or consent of department. Three hours lecture/discussion each week. Formerly SO 240.*
3 semester hours

SONO—Diagnostic Medical Sonography

SONO 101 Orientation to Diagnostic Medical Sonography (TP/SS only)

An orientation to the field of diagnostic medical sonography followed by techniques for assisting and monitoring patients. Professional ethics, legal issues, and patient care procedures pertinent to sonography will be covered. Chart reading and recordkeeping relative to ultrasound will be presented. PREREQUISITES: *Admission to the diagnostic medical sonography program or consent of program coordinator; CPR Certification—Class C. Assessment levels: MATH 110, READ 120. Laboratory experience required on and off campus. Two hours lecture, two hours laboratory each week. Formerly MS 101.*

3 semester hours

SONO 105 Acoustical Physics I (TP/SS only)

Fundamental principles of acoustical physics including wave propagation, biological effects, acoustical impedance properties, and transducer characteristics will be presented. Basic types of equipment, instrumentation, quality control, and safety are discussed. Laboratory experience required on and off campus. PREREQUISITES: *Admission to the diagnostic medical sonography program or consent of program coordinator; mathematics foundation and PHYS 010 or higher.* COREQUISITES: *SONO 204 and SONO 279, or consent of program coordinator. Assessment level: READ 120. One-and-a-half hours lecture, one hour laboratory each week. Formerly MS 102.* *2 semester hours*

SONO 112 Abdominal Sonography I (TP/SS only)

A study of the fundamentals of abdominal sonography, including the case study reviews of normal anatomy, physiology, and pathological conditions of the abdominal and superficial structures. PREREQUISITES: *BIOL 212, BIOL 231; SONO 204 or consent of program coordinator.* COREQUISITE: *SONO 275 or consent of program coordinator. Two hours lecture, two hours laboratory each week. Formerly MS 112.* *3 semester hours*

SONO 123 Obstetric/Gynecology Sonography I (TP/SS only)

A study of fundamentals of obstetrics/gynecology scans of normal and abnormal anatomy. Fetal development, including abnormal etiology and diagnostic techniques, is presented. The detection of abnormalities, pathologies, and deviation from normal is stressed. Body planes, which must be scanned for an accurate diagnosis, are emphasized. PREREQUISITE: *SONO 204 or consent of program coordinator.* COREQUISITE: *SONO 275. Two hours lecture, two hours laboratory each week. Formerly MS 113.*

3 semester hours

SONO 200 Independent Study in Diagnostic Medical Sonography (TP/SS only)

Through independent study, sonography students will conduct research in cutting-edge diagnostic medical sonography technology, professional advancements and/or case studies. Students will be assigned to diagnostic medical sonography faculty for guidance and supervision. Letter designators in the schedule of classes will distinguish the 1-, 2,- 3-, and 4-credit versions of SONO 200. PREREQUISITE: *Admission to the diagnostic medical sonography program or consent of program coordinator. Minimum 45 hours of work for each credit hour. Formerly MS 200.* *1–4 semester hours*

SONO 204 Introduction to Sectional Anatomy (TP/SS only)

An introduction to ultrasound sectional anatomy. Anatomy will be presented in the transverse, sagittal, and coronal planes. Laboratory experience required on and off campus. PREREQUISITE: *BIOL 212 or consent of program coordinator.* COREQUISITES: *SONO 105 and SONO 279.* PRE- or COREQUISITE: *BIOL 213. Two hours lecture, two hours laboratory each week. Formerly MS 201.* *3 semester hours*

SONO 205 Acoustical Physics and Instrumentation II (TP/SS only)

A continuation of SONO 105. Fundamental principles of acoustical physics, including speed of sound, reflection, refraction, and attenuation through soft tissue; principles of pulse echo imaging and scanning speed limitation. PREREQUISITE: *SONO 105.* COREQUISITE: *SONO 275. One-and-a-half hours lecture, one hour laboratory each week. Formerly MS 202.*

2 semester hours

SONO 210 Breast Sonography (TP/SS only)
A study of the fundamentals of breast sonography, including the case study review of normal anatomy, physiology, and pathological conditions of the breast tissue and its visualization with real-time 2-D and 3-D imaging, and Doppler. PREREQUISITE: *SONO 204 or consent of program coordinator.* COREQUISITE: *SONO 280 or consent of program coordinator. One hour lecture, one hour laboratory each week.. Formerly MS 210. 1 semester hour*

SONO 224 Seminar—Diagnostic Medical Sonography (TP/SS only)
On-campus seminar addresses issues that will facilitate the graduates' entry into the career of sonography. Topics include registry examination preparation, resume writing, and test-taking strategies. PREREQUISITE: *Admission to the diagnostic medical sonography program or consent of program coordinator. One hour each week. Formerly MS 224.*
1 semester hour

SONO 229 Pediatric Echocardiography (TP/SS only)
A study of the fundamentals of pediatric echocardiography, including the case study review of normal anatomy, physiology, and pathological conditions of the pediatric heart and its visualization with real-time 2-D and 3-D imaging, Doppler, and M-mode echocardiography. PREREQUISITE: *SONO 204 or consent of program coordinator.* COREQUISITE: *SONO 280 or consent of program coordinator. Two hours lecture, two hours laboratory each week. Formerly MS 211. 3 semester hours*

SONO 232 Abdominal Sonography II (TP/SS only)
A continuation of the study of abdominal sonography including interpretation of clinical tests, related clinical signs and symptoms, and normal and abnormal sonographic patterns. This course includes laboratory experience on basic scanning techniques and protocol relative to the abdominal structures and physiology. PREREQUISITE: *SONO 112 or consent of program coordinator.* COREQUISITE: *SONO 278. Two hours lecture, two hours laboratory each week. Formerly MS 212.*
3 semester hours

SONO 243 Obstetric/Gynecology Sonography II (TP/SS only)
A continuation of obstetrics/gynecology scanning of normal and abnormal anatomy. Fetal development, including abnormal etiology and diagnostic techniques, is presented. The detection of abnormalities, pathologies, and deviation from normal is stressed. Body planes that must be scanned for an accurate diagnosis will be emphasized. PREREQUISITE: *SONO 123 or consent of program coordinator.* COREQUISITE: *SONO 278. Two hours lecture, two hours laboratory each week. Formerly MS 213.*
3 semester hours

SONO 245 Adult Echocardiography I (TP/SS only)
A study of the fundamentals of adult echocardiography, including the case study review of normal anatomy, physiology, and pathological conditions of the adult heart and its visualization with real-time 2-D imaging, 3-D and 4-D imaging, Doppler, and M-mode echocardiography. PREREQUISITE: *SONO 204 or consent of program coordinator.* COREQUISITE: *SONO 275 or consent of program coordinator. Two hours lecture, two hours laboratory each week. Formerly MS 215. 3 semester hours*

SONO 246 Vascular Sonography I (TP/SS only)
A broad overview of the fundamental theory and skills that are utilized to evaluate vascular disease using noninvasive techniques. Instrumentation, vascular anatomy, physiology, pathology, and physical principles and therapy are emphasized. Testing procedures in areas of cerebrovascular, peripheral arterial, and venous testing are included in this course. PREREQUISITE: *SONO 204 or consent of program coordinator.* COREQUISITE: *SONO 275 or consent of program coordinator. Two hours lecture, two hours laboratory each week. Formerly MS 216.*
3 semester hours

SONO 248 Adult Echocardiography II (TP/SS only)
Case study reviews of normal anatomy, physiology, and pathological conditions of the adult heart. PREREQUISITE: *SONO 245 or consent of program coordinator.* COREQUISITE: *SONO 278 or consent of program coordinator. Two hours lecture, two hours laboratory each week. Formerly MS 218.*
3 semester hours

SONO 256 Vascular Sonography II
(TP/SS only)
Case study reviews of normal anatomy, physiology, and pathological conditions of the cerebrovascular, peripheral arterial and venous systems. PREREQUISITE: *SONO 246 or consent of program coordinator.* COREQUISITE: *SONO 278 or consent of program coordinator. Two hours lecture, two hours laboratory each week. Formerly MS 219.*
3 semester hours

SONO 275 Sonography Practicum
(TP/SS only)
Supervised off-campus experience and practice in the multidisciplinary areas of diagnostic medical sonography occurs in hospitals, clinics, and private physician offices. Students will complete a rotation through multiple clinical sites in which the students will be introduced to equipment operation, multiple sonographic examinations, and related clinical correlation. PREREQUISITE: *SONO 204 or consent of program coordinator. Eight hours each week. Formerly MS 220. 1 semester hour*

SONO 276 Sonography Practicum I
(TP/SS only)
Supervised off-campus experience and practice in the multidisciplinary areas of diagnostic medical sonography. Continuous development of ultrasound scanning skills and techniques. Students will continue to build on their previous clinical experiences. PREREQUISITE: *SONO 275 or consent of program coordinator. Twenty-four hours each week. Formerly MS 221. 2 semester hours*

SONO 277 Sonography Practicum II
(TP/SS only)
Supervised off-campus experience and practice in the multidisciplinary areas of diagnostic medical sonography. Continuous development of ultrasound scanning skills and techniques. Students will build on their previous clinical experiences. PREREQUISITE: *SONO 277 or consent of program coordinator. Thirty-two hours each week. Formerly MS 222. 4 semester hours*

SONO 278 Sonography Practicum III
(TP/SS only)
Supervised off-campus experience and practice in the multidisciplinary areas of diagnostic medical sonography to develop the optimal skills necessary to become competent in performing sonographic examinations. All procedures covered in the curriculum will be evaluated for competency during this last clinical course. PREREQUISITE: *SONO 278 or consent of program coordinator. Thirty-two hours each week. Formerly MS 223.*
4 semester hours

SONO 279 Sonography Practicum IV
(TP/SS only)
Supervised off-campus experience and practice in the multidisciplinary areas of diagnostic medical sonography. Continuous development of ultrasound scanning skills and techniques. Students' knowledge and skills will build on their clinical experiences. PREREQUISITE: *SONO 101 or consent of program coordinator.* COREQUISITE: *SONO 204 or consent of program coordinator. One hundred twenty (120) hours per semester. Formerly MS 225.*
1 semester hour

SONO 280 Sonography Practicum V
(TP/SS only)
Supervised off-campus experience and practice in the multidisciplinary areas of diagnostic medical sonography. Continuous development of ultrasound scanning skills and techniques. Student's knowledge and skills will build on their clinical experiences. PREREQUISITE: *SONO 279 or consent of program coordinator. One hundred twenty (120) hours per semester. Formerly MS 226. 1 semester hour*

SPAN—Spanish

SPAN 099 Functional Spoken Spanish
A beginning course in functional Spanish for travelers, students, and professionals, focusing on pronunciation, comprehension, and sentence patterns. This course provides a basis for learning and using Spanish and emphasizes listening and speaking skills with more limited consideration of reading and writing skills. Essential aspects of Hispanic cultures are introduced as part of the course. Course topics may vary. This course does not fulfill language or General Education requirements. No previous study of Spanish is required. *May be repeated for credit. Three hours each week. Formerly SN 099.*
3 semester hours

SPAN 101 Elementary Spanish I
(HUMD[M])
A beginning language course focusing on the study of Spanish language and culture. Students begin to develop the ability to communicate in Spanish through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of Spanish is required. *In-class work is supplemented by 20 hours in the language learning laboratory.* Three hours each week. *Formerly SN 101.* *3 semester hours*

SPAN 102 Elementary Spanish II
(HUMD[M])
A continuation of SPAN 101. Students continue their study of written language, conversation, and composition as they consider cultural themes, language functions, and authentic situations. PREREQUISITE: *SPAN 101 or consent of department. In-class work is supplemented by 20 hours in the language learning laboratory. Three hours each week. Formerly SN 102.* *3 semester hours*

SPAN 103 Intensive Elementary Spanish
(HUMD[M])
An intensive language course comparable to SPAN 101 and SPAN 102 designed for students who have previously studied Spanish but do not place at the level of SPAN 102 and SPAN 201. The class is communicatively based, focusing on the further development of reading, writing, speaking, and listening skills through the consideration of cultural themes, language functions, and authentic situations. Students should expect the language of the classroom to be Spanish. As part of the curriculum, students explore the many cultures that make up the Spanish-speaking world and present a cultural project. PREREQUISITE: *Appropriate placement on the Spanish placement test, a minimum of two years of high school Spanish or equivalent, or consent of department. First day in-class placement assessments will be made. In-class work is supplemented by 20 hours in the language learning laboratory. Students who have successfully completed SPAN 102 are not eligible to take SPAN 103 for credit. Not open to native speakers of Spanish. Four hours each week. Formerly SN 103.* *4 semester hours*

SPAN 106 Spanish for Heritage Speakers
(HUMD[M])
A course designed for heritage Spanish or native speakers who can express themselves orally and in writing in Spanish, but have not received formal education in the language. Emphasis on orthographic and grammatical concepts geared to improve spelling, writing and oral abilities, focusing on the exploration of contextualized cultural and social topics addressing Hispanic/Latino communities inside and outside of the United States. Students may not receive credit for both SPAN 106 and SPAN 101/SPAN 102. *In-class work is supplemented by 10 hours in the language learning laboratory. Four hours each week. Formerly SN 106.*
4 semester hours

SPAN 201 Intermediate Spanish I
(HUMD[M])
Focuses on the study of Spanish language and culture at the intermediate level. Students further their ability to communicate in Spanish through an advanced consideration of cultural themes and a thorough review of Spanish grammar to support increased focus on reading and composition. PREREQUISITE: *SPAN 102, SPAN 103, SPAN 106 or consent of department. In-class work is supplemented by 10 hours in the language learning laboratory. Three hours each week. Formerly SN 201.*
3 semester hours

SPAN 202 Intermediate Spanish II
(HUMD[M])
A continuation of SPAN 201. Students further their ability to communicate in Spanish through an advanced consideration of cultural themes and a review of Spanish grammar to support an increased focus on reading and composition. PREREQUISITE: *SPAN 201 or consent of department. In-class work is supplemented by 10 hours in the language learning laboratory. Three hours each week. Formerly SN 202.* *3 semester hours*

SPAN 203 Intensive Intermediate Spanish
An intensive intermediate language course comparable to SPAN 201 and SPAN 202. Students further their abilities to consideration of cultural themes and a thorough review of Spanish of grammar to support increased focus on reading and composition. PREREQUISITE: *SPAN 102, SPAN 103 or consent of department. In-class work is supplemented by 10 hours in the language learning laboratory. Four hours each week. Formerly SN 203.*
4 semester hours

SPAN 215 Advanced Spanish Conversation and Composition *(HUMD[M])*
Emphasis on fluency in speaking and writing Spanish. Readings in texts and assigned outside sources serve as basis for classroom discussion in Spanish as well as for advanced composition. Includes readings in Spanish and/or Latin-American literature. PREREQUISITE: *SPAN 202, SPAN 203 or appropriate placement on the placement test or consent of department. Three hours each week. Formerly SN 215.* *3 semester hours*

SPAN 216 Advanced Readings in Spanish: Introduction to Latin American Literature (HUMD[M])
A survey of representative works in Latin American literature from pre-colonial times to the present. Students consider various genres as they analyze a variety of texts. The course provides an introduction to literary criticism and textual analysis and examines the key biographical, literary, social, cultural, and political influences on the works under consideration while developing students' proficiency in Spanish. The language of instruction is Spanish. PREREQUISITE: *SPAN 202, SPAN 203 or appropriate placement on the placement test or consent of department. Three hours each week. Formerly SN 216.* *3 semester hours*

STBR—Study Abroad

STBR 200 Foreign Study Program
An orientation and goal-setting course for students who will be studying abroad and earning credits at accredited non-U.S. institutions. Working with the study abroad coordinator prior to their semester abroad, students will establish goals, select courses abroad in conjunction with their discipline of study, and determine transferability of credits to Montgomery College upon course completion, according to transcript evaluator guidelines. A post-program conference will determine completed objectives. PREREQUISITE: *Consent of collegewide study abroad coordinator. Three hours each week. Formerly SA 200.* *No credit/No quality points*

STSU—Student Development

STSU 100 First Year Seminar
Designed to assist the student in adjusting to college. Includes academic and student services available, study habit techniques, career and educational planning, and adjustment concerns. Especially intended for students during their initial semester of enrollment. *One hour lecture/discussion each week. Formerly DS 107.* *1 semester hour*

STSU 101 Seminar for International Students
Orientation course for international students. Includes study skills, academic regulations, the American educational system, individual educational and vocational goals, communication skills, and American customs. Especially intended for students during their initial semester of enrollment in conjunction with American language developmental course offerings. *Two hours lecture/discussion each week. Formerly DS 104.*
2 semester hours

STSU 110 Study Habits Development
Stresses development of positive attitudes and improvement of basic learning habits. Includes value assessment and educational goal setting. Stresses strategies in understanding and responding to textbooks, lectures, and other methods and materials encountered in the academic environment. Emphasis on organization of materials, utilization of time, and preparing for and taking examinations. *One hour lecture/discussion each week. Formerly DS 102.* *1 semester hour*

STSU 112 Building Math Confidence
Designed for those who want to improve their attitude toward mathematics. Explores feelings and develops strategies to overcome math phobia. Emphasis will be placed on problem-solving approaches to diagrammed, descriptive, and symbolic number problems. This course is open to students at all levels of mathematical skills, whether preparing for a job, college courses, a test, or living in a world where numbers matter. *One hour lecture/discussion each week. Formerly DS 112.*
1 semester hour

STSU 114 Memory Development
Designed to assist the student in developing memory through simple systems of association. Topics include development of memory for author organization, course organization, course relationships, and practical application to everyday life situations. *One hour lecture/discussion each week. Formerly DS 108.* *1 semester hour*

STSU 120 Career Development: Dynamics and Application
Designed for students interested in developing career goals and creating a plan of action. The course provides students with an opportunity to learn and develop skills for a lifetime of career-related decision making. Emphasis will be placed on personal academic and occupational exploration, resume writing, interviewing, and effective job search strategies. *Two hours lecture/discussion each week. Formerly DS 103.* *2 semester hours*

STSU 122 Success Group
Designed specifically for students who are dissatisfied with their academic performance and who wish to improve their achievement in college courses. This course stresses elimination of self-defeating attitudes and behaviors, setting and achieving short-term academic goals, identification of motives that lead to failure, learning to accept responsibility for one's behavior, and building a more positive attitude about one's potential for college success. This course does not deal primarily with study habits or techniques but with motives and attitudes related to academic success. *Two hours lecture/discussion each week. Formerly DS 106.*
2 semester hours

SURG—Surgical Technology

SURG 100 Introduction Surgical Technology (TP/SS only) **CE**
Introduces the skills and techniques needed to perform as a surgical technologist in the operating room. Surgical instrumentation and basic pharmacology for the surgical technologist are included. PREREQUISITES: *Admission to the surgical technology program or consent of program coordinator, ENGL 101/101A and MATH 110.* PRE- or COREQUISITE: *BIOL 212. Four hours lecture, four hours laboratory each week. Formerly SG 100.* *4 semester hours*

SURG 101 Surgical Technology I (TP/SS only) **CE**
Continues established of the skills and techniques needed for preparing the operating room for surgical procedures. Legal, ethical, and moral aspects are covered in addition to perioperative case management. PREREQUISITES: *Admission to the surgical technology program or consent of program coordinator, BIOL 213 and SURG 100. Four hours lecture, four hours laboratory each week. Formerly SG 101.*
6 semester hours

SURG 102 Surgical Technology II (TP/SS only) **CE**
A continued study of the principles and practice of surgical case management including the technological sciences and disaster of public health emergency management. Microbiology for the surgical technologist, methods of disinfection and sterilization of the OR, supplies and equipment included. PREREQUISITE: *A grade of C or better in SURG 101 or consent of program coordinator. Four hours lecture, four hours laboratory each week. Formerly SG 102.*
6 semester hours

SURG 103 Pharmacology and Anesthesia (TP/SS only)
Covers action and usage of commonly used drugs, the computation of drug dosages, solutions and the methods by which they are administered. PREREQUISITES: *Admission to the surgical technology program or consent of program coordinator, and a grade of C or better in both BIOL 212 and MATH 110 or higher. Two hours each week. Formerly SG 103.*
2 semester hours

SURG 201 Surgical Technology III (TP/SS only)
The study of actual surgical procedures and intraoperative performance. It combines pathology, anatomy, and physiology and a step-by-step process of specific surgical procedures to provide the student with a broad knowledge base and the skills needed to perform as a surgical technologist and Assistant Circulator. Students will gain an understanding of the roles and responsibilities of the surgical technologist and reflect the dynamic professional process that is needed in operating room endeavors. Correlates intraoperative procedures with postoperative care. PREREQUISITE: *A grade of C or better in SURG 101 or consent of program coordinator. Four hours lecture, four hours laboratory each week. Formerly SG 201. 6 semester hours*

SURG 205 Clinical Practicum I (TP/SS only)
Provides the student with opportunities to apply those theories learned in SURG 101 to the actual practice of surgical procedures. PRE- or COREQUISITES: *A grade of C or better in SURG 101 and SURG 201 or consent of program coordinator. Three hundred sixty (360) hours of clinical practice. Formerly SG 202. 3 semester hours*

SURG 211 Surgical Technology IV (TP/SS only)
Focuses on the role transition to beginning surgical technologist practitioner. This course combines pharmacology, pathology, anatomy, and physiology, and continues and a step-by-step process of each surgical procedure. Correlates theory with clinical practice. Resume development and employment preparation included. PREREQUISITES: *A grade of C or better in SURG 201 and SURG 202, or consent of program coordinator.* PRE- or COREQUISITE: *SURG 102.* COREQUISITE: *SURG 212. Four hours lecture, four hours laboratory each week. Formerly SG 211. 6 semester hours*

SURG 215 Clinical Practicum II (TP/SS only)
This course emphasizes a common systematic approach to all surgeries and introduces the surgical technologist's role on specialty teams, as second circulator and second assistant. PREREQUISITES: *A grade of C or better in SURG 201 and SURG 202, or consent of program coordinator.* COREQUISITE: *SURG 211. Three hundred thirty-six (336) hours of clinical practice. Formerly SG 212. 3 semester hours*

THET—Theatre

THET 100 Introduction to the Theatre *(ARTD)*
This is an entry-level course which offers a broad overview of the theatre arts for the theatre major or nonmajor. The work of the various artists who create the theatre arts will be investigated and analyzed along with the analysis of script structure and form through historical and modern perspectives. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly TH 108. 3 semester hours*

THET 110 Fundamentals of Acting *(ARTD)* (R and TP/SS only)
An introduction to basic acting skills, including exercises in speech, movement, and imagination. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly TH 109. 3 semester hours*

THET 114 Stagecraft I (R only)
The principles and practice of drama production, with emphasis on planning, constructing, and shifting scenery, and on the management of backstage operations. Additional laboratory hours and actual work on College productions. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours lecture, two hours laboratory each week. Formerly TH 114. 3 semester hours*

THET 118 Theatrical Makeup Techniques (R only)
A study of theories and techniques of theatrical makeup. This course is designed to familiarize students with the materials and their application, with each student experiencing the techniques involved in corrective, character, and special effects makeup. *Assessment levels: ENGL 101/101A, READ 120. Two hours lecture/demonstration, two hours laboratory each week. Formerly TH 119. 3 semester hours*

THET 122 Performance Production (R and TP/SS only)
Practical experience in the production aspects of the performing arts. Students are assigned tasks in the areas of acting, dancing, choreography, costuming, lighting, scene construction and painting, and house and stage management for College productions. Acting and/or dancing in a production is by audition only. *Assessment levels: ENGL 101/101A, READ 120. Students will spend a minimum of 70 hours per semester in production and 30 hours per semester in a laboratory, in addition to a one-hour lecture each week. The course may be repeated for a total of three credits. Formerly TH 120. 1 semester hour*

THET 201 Intermediate Acting (R and TP/SS only)
Practice in textual analysis, scene study, and the process of developing characterization for performance in the theatre. PREREQUISITE: *THET 110 or consent of department. Three hours each week. Formerly TH 112. 3 semester hours*

THET 205 Movement for the Performer (R only)
The introduction of self-use techniques as applied to the development of a theatrical character. These techniques include discussion and application of relaxation, Alexander, LeCoq, and Laban theory. Improvisation technique is also explored and practiced. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly TH 121. 3 semester hours*

THET 208 Drafting/Painting for the Performing Arts (R only)
Study of the graphic processes utilized by the scene designer in transferring concepts and ideas to the stage. The students develop basic skills in theatrical drafting and scene painting techniques through their work on assigned projects. PREREQUISITE: *THET 114 or consent of department. Three hours lecture, two hours practical laboratory each week. Formerly TH 208. 3 semester hours*

THET 216 Stage Lighting for the Performing Arts (R only)
An exploration of the theory of and theatrical practice in the use of basic elements of electricity, lighting equipment and design in the production of theatre, television, and dance. Students will be involved in the exploration of the theory and practice of basic fundamentals of lighting techniques, electricity, equipment and standards, and the use of light in the production of theatre, dance, and television. Students will be required to work additional hours on lighting for productions. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly TH 116. 3 semester hours*

THET 225 Acting for Film and Television (TP/SS only)
An approach to the art and craft of performance before a camera in both the motion picture and television studio. The student begins work with narrative film and TV materials that require artistic and technical involvement peculiar to film and electronic entertainment media. A small film fee may be required. *Assessment levels: ENGL 101/101A, READ 120. Two hours lecture, two hours laboratory each week. Formerly TH 225. 3 semester hours*

THET 230 Costuming Crafts for the Performing Arts (R only)
An introduction to sewing techniques, patterning, fabrics, and costume shop equipment, with a survey of costume crafts and shop organization. Students will participate in costuming for productions. PREREQUISITE: *A grade of C or better in MATH 080, appropriate score on the mathematics placement test, or consent of department. Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly TH 118. 3 semester hours*

THET 237 Fundamentals of Play Directing (R only)
An introduction to the basic techniques, principles, and disciplines of directing for the theatre. The director's role, composition, script analysis, movement and rhythm, production preparation and procedures will be covered. At the conclusion of the course, the student will prepare a one-half hour production for performance. Additional time outside of class for rehearsals will be required. PREREQUISITE: *THET 100 or consent of department. Three hours each week. Formerly TH 117.*
3 semester hours

THET 295 Theatre Internship (R and TP/SS only)
Students work for College credit in a theatre or other professional performing arts organization or venue. Students may propose an internship for one of the limited number available in theatre each year. Typically, the internships are awarded during the last year of study at Montgomery College. PREREQUISITES: *Open to theatre majors who have completed 24 theatre-related credits. A 3.2 GPA and consent of departmental theatre internship coordinator and the Arts Institute internship coordinator are required. Fifteen hours each week per semester. Formerly TH 295.* *3 semester hours*

TVRA—Television/Radio

TVRA 101 Video Editing for Broadcast (R only)
An introduction to the procedures and equipment used to manipulate video and audio using professional non-linear editing software. Hands-on projects allow students to edit still and animated images, sounds, and video to create professional quality projects suitable for broadcast, educational, and corporate use. *Assessment levels: ENGL 101/101A, READ 120. Two hours lecture, four hours laboratory each week. Formerly TR 101.* *4 semester hours*

TVRA 105 Introduction to Broadcasting (R only) **CE**
The organization, scope, development, and practices of American broadcasting. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly TR 129.* *3 semester hours*

TVRA 120 Television Production (R only)
Introduction to television production facilities and techniques. Principles of picture composition, camera movement, lighting, and audio and control room operation are demonstrated and experienced in actual studio productions. The student will participate in laboratory exercises and be able to demonstrate proficiency in these exercises. The student will produce programs using available studio resources and under the direction of specific formats. *Assessment levels: ENGL 101/101A, READ 120. Two hours lecture, four hours laboratory each week. Formerly TR 130.* *4 semester hours*

TVRA 125 Audio Production Techniques (R only)
Basic theory, equipment, and procedures used in audio production for radio, television, and film sound recording. Hands-on projects allow students to learn the operation and application of digital and analog audio equipment and editing software common to all fields of communication. *Assessment levels: ENGL 101/101A, READ 120. Three hours lecture, three hours laboratory each week. Formerly TR 131.*
4 semester hours

TVRA 129 Writing for Television and Radio (R only)
Study of the methods and styles of production writing. Application will be made in the preparation of various broadcast and nonbroadcast scripts. PREREQUISITES: *A grade of C or better in ENGL 101 or ENGL 101A and typing speed of 25 wam. Three hours each week. Formerly TR 139.*
3 semester hours

TVRA 134 Media Appreciation *(ARTD)* (R only)
A survey course to introduce and discuss various audiovisual communication forms and review examples of media presentations from television, radio, motion pictures, and photography. *Assessment levels: ENGL 101/101A, READ 120. Three hours each week. Formerly TR 104.* *3 semester hours*

TVRA 140 Video Editing (R only)
An introduction to the equipment and procedures used to manipulate video and audio using professional nonlinear editing software. Hands-on projects allow students to create, mix, and edit video and still and animated images and sounds into presentations suitable for visual arts, educational, and corporate use. *Assessment levels: ENGL 101/101A, READ 120. Two hours lecture, three hours laboratory each week. Formerly TR 110.*
3 semester hours

TVRA 215 Computers in Radio (R only)
Study of computer applications used in radio production, programming, sales, news, and management. Applications include digital audio workstations, multitrack, live assist studio scripting, program and commercial logging, sales and rating, newsroom and music rotation systems. Basic and intermediate-level training is provided in each application leading to operational proficiencies. PREREQUISITE: *A grade of C or better in TVRA 125 or consent of instructor. Three hours each week. Formerly TR 215.* *3 semester hours*

TVRA 220 Radio Production (R only)
Study in the techniques of production of radio programs, radio program logs, special types of radio productions, and advanced techniques of control room operations. The student will be required to demonstrate competencies through a series of laboratory exercises and will be required to produce radio programs of specific design. PREREQUISITES: *A grade of C or better in TVRA 105 and TVRA 125. Three hours lecture, three hours laboratory each week. Formerly TR 233.*
4 semester hours

TVRA 224 Electronic Field Production (R only)
The theory and practice of single video camera planning, production and post-production techniques. Edited final productions include stand-alone videos as well as videos that can be integrated into animations and other visual presentations that are recorded to videotape or digital video devices, or streamed on the Internet. Hands-on projects allow students to create videos of the type and design suitable for educational, commercial, and corporate use. PREREQUISITES: *A grade of C or better in TVRA 101 and TVRA 120. Two hours lecture, three hours laboratory each week. Formerly TR 258.*
3 semester hours

TVRA 227 Broadcast Journalism (R only)
Introduction to writing news and current events material for television and radio broadcasting. Practical application in producing a weekly news program. PREREQUISITES: *A grade of C or better in TVRA 105, TVRA 120 or TVRA 125, and TVRA 129. Five hours each week. Formerly TR 237.*
3 semester hours

TVRA 230 Advanced Television Production (R only)
Continued development of pre- and studio production skills, procedures, and techniques through practical applications of various television programming formats. The student, participating in various production activities, will demonstrate the ability to function effectively as a television producer and as a production crew member in an intense professional setting. PREREQUISITES: *A grade of C or better in TVRA 101, TVRA 120, and TVRA 125. Two hours lecture, four hours laboratory each week. Formerly TR 240.* *4 semester hours*

TVRA 234 Television Directing (R only)
Emphasis on planning, rehearsing, and directing the television production. The objective is to accumulate direction principles and production techniques as applied to educational, entertainment, and news programming. PREREQUISITE: *A grade of C or better in TVRA 230. Six hours each week. Formerly TR 238.* *3 semester hours*

TVRA 239 Broadcast Management and Engineering (R only)
The combined study of television and radio broadcast management in the areas of station structure, personnel, promotion, sales, legal requirements, audiences, fiscal structures, and broadcast engineering in the areas of electronic fundamentals for radio and television and personnel functions and responsibilities. PREREQUISITES: *A grade of C or better in TVRA 105 and in TVRA 120 or TVRA 125. Three hours each week. Formerly TR 249.*
3 semester hours

TVRA 250 Advanced Digital Media Production (R only)
A course involving the creation of an original digital multimedia presentation in the form of a menu-driven DVD. This process includes selection of a client, needs assessment, objectives statement, budget estimates, timelines, scheduling, working with the client, planning and shooting original video footage and/or rendering an original animation, creating appropriate audio tracks for that original video and/or animation, editing and compositing still and moving visual images with each other and with appropriate audio tracks, and evaluating the effectiveness of the final product. PREREQUISITES: *A grade of C or better in TVRA 101, TVRA 125, and TVRA 224, or consent of department. Two hours lecture, four hours laboratory each week. Formerly TR 295.* *4 semester hours*

TVRA 255 Advanced Broadcast Journalism (R only)
Intensive application in the writing and editing of an actual news program. Students will operate on a realistic deadline to gather, write, and deliver news for the local campus news program "MC Update." PREREQUISITES: *A grade of C or better in TVRA 220 or TVRA 230 and in TVRA 227. Three hours lecture, four hours laboratory each week. Formerly TR 255.* *3 semester hours*

TVRA 260 Radio Station Operation (R only)
Advanced radio students participate in daily operation of a simulated campus-wide radio station. Students will function in the areas of production, engineering, performance, and management. PREREQUISITE: *A grade of C or better in TVRA 220. One hour lecture, five hours laboratory each week. Formerly TR 256.* *3 semester hours*

TVRA 275 Television/Radio Internship (R only)
Students work for college credit in the professional setting of a broadcast station or industrial facility. Internships are offered in the areas of television, radio, or audiovisual services. A variety of programs are available in engineering, news, programming, sales, and management. PREREQUISITES: *Television, radio, or audiovisual majors with advanced standing and consent of internship coordinator. One hour seminar and a minimum of 20 hours supervised training each week. Formerly TR 275. 4 semester hours*

TVRA 280 Special Communications and Broadcasting Technology Assignments (R only)
Offered on an individual basis to communication and broadcasting technology majors with advanced standing. Students may extend their studies or specialization within the curriculum. PREREQUISITE: *Consent of curriculum coordinator and department chairperson. Hours to be assigned by the chairperson. Minimum of 30 hours work per semester hour credit. Formerly TR 280.* *1–4 semester hours*

WMST—Women's Studies

WMST 101 Introduction to Women's Studies *(HUMD[M])*
Interdisciplinary approach to the field of women's studies. Examines the status, roles, contributions, personal and public experiences of women in society, using sources from literature, psychology, history, sociology, biology, political science, philosophy, anthropology, and the arts. PRE- or COREQUISITE: *ENGL 101 or consent of women's studies program coordinator. Formerly WS 101.* *3 semester hours*

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Associate Dean, Arts, Humanities, and Social Sciences ..... (Vacant)
Instructional Dean, Health Sciences..... Angela M. Pickwick
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BS, New Mexico Institute of Mining and Technology;
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Professor, Photography
Certificate of Completion, Painting, International School of Art Liberal Arts Diploma, American University of Paris (France);
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BS, MEd, Tuskegee University

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BS, East Stroudsburg State College;
MS, University of Arizona

JOAN HAWKINS, MEd (1986)
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WENDY HE, PhD (2005)
Associate Professor, Engineering Science
BS, National University of Defense Technology (China);
MS, PhD, University of Maryland, Baltimore County

R. SCOTT HENGEN, MFA (2001)
Professor, Speech
BS, BA, Pennsylvania State University;
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SHINTA HERNANDEZ, MA (2011)
Associate Professor, Sociology
BA, Brandeis University;
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JORGE HERNANDEZ-FUJIGAKI, PhD (2000)
Professor, History
BA, National Autonomous University of Mexico;
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ARAM HESSAMI, PhD (2004)
Professor, Political Science
AA, Montgomery College;
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ALAN S. HEYN, PhD (1975)
Professor, Chemistry
BS, University of Illinois;
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BS, MFA, Kent State University

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BA, Shengyang University (China);
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Professor, Biology
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SUSAN T. HOFFMAN, MA (1972)
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GAIL MINOR-SMITH, PhD (1991)
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BA, MA, University of Maryland

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BA, University of North Florida;
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MA, University of Connecticut

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MS, Hood College

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MA, PhD, Tulane University

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Professor, Mathematics
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MS, Rutgers University;
MS, D.Phil., University of Allahabad (India)

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Professor, Music
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Rockville Full-Time Faculty *(continued)*

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MA, University of Southern Mississippi;
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BGS, University of Maryland;
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BFA, Ohio University;
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CAS, Harvard Graduate School of Education;
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BS, Boise State University;
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Full-Time Faculty

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AFA, Northwestern Connecticut Community College;
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MSN, Emory University

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BS, University of New Mexico;
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BS, University of Maryland;
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PhD, University of the Philippines

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MA, Trinity College

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BS, California College for Health Sciences

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BA, State University College of Purchase, NY;
MA, University of Maryland;
MPS, Manhattanville College;
MA, The George Washington University

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BS, University of Pennsylvania;
MBA, Loyola College in Maryland;
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Associate Professor, Counseling and Advising
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MA, Bowie State University;
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Professor, Counseling and Advising
AS, Northern Virginia Community College;
BS, University of Maryland University College;
BA, Washington Bible College;
MA, Bowie State University;
EdD, Argosy University

ADEL HALLI, PhD (2000)
Associate Professor, Chemistry
BS, Université Cadi Ayyad (Morocco);
MA, PhD, Université Pierre et Marie Curie (France)

SHARON HAUGE, PhD (1999)
Professor, Mathematics
BA, Kansas State University;
MA, Oklahoma State University;
MS, PhD, American University

ROBERT HELSLEY, BFA (2003)
Professor, Art
BFA, Maryland Institute College of Art

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Instructor, Counseling
BS, Mansfield University;
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Associate Professor, Psychology
BS, MS, University of Maryland

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BS, Pacific University;
PhD, Oregon Health & Science University

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Associate Professor, Mathematics
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MS, Virginia Polytechnic Institute and State University

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BA, JD, Howard University

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AA, Oakwood College;
BSN, Columbia Union College;
MSN, Washington Adventist University

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BS, Adelphi University;
MA, Teachers College, Columbia University;
Graduate Certificate, University of Maryland, Baltimore County

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Professor, Nursing
BSN, MSN, Omayal Achi College of Nursing (India)

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Professor, Biology
BA, University of Zaire in Kisangani;
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BS, MS, Pennsylvania State University

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Professor, Nursing
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Professor, English
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MS, University of Maryland University College

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MA, University of Texas—Pan American

SADI SAHBAZIAN, PhD (2004)
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BA, University of Istanbul (Turkey);
MA, University of Texas at Arlington;
MA, PhD, Oklahoma State University

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ATHENA M. SEMPE, AA (2012)
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AA, San Jacinto College

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BS, MBA, Stephens College

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MSN, Stevenson University

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Clinical facilities are institutions, agencies, or clinics to which students in various health sciences curricula are assigned for clinical experience. Clinical associate faculty are those part-time instructors who are furnished by and teach courses at various clinical facilities contractually associated with the health sciences curriculum offered by Montgomery College.

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Appendices

Appendix A

Determination of Residence for Tuition Purposes

Note: The information in this appendix was current at the time the catalog was prepared, but the student should visit the Policies and Procedures webpage *(www.montgomerycollege.edu/pnp)* for additional information and for changes that may have been made since then.

To qualify, for tuition purposes, as a resident of Montgomery County or the state of Maryland, legal domicile must have been maintained for a period not less than three months prior to the first regularly scheduled class for the semester. Furthermore, the student must possess the legal capacity under state and federal law to establish Maryland domicile. In establishing the domicile of a person enrolling in a credit course at Montgomery College, the following procedures shall prevail:

- Domicile shall be considered as a person's permanent place of abode, where physical presence and possessions are maintained and where he or she intends to remain indefinitely. The domicile of a person who received more than one-half of his or her financial support from others in the most recently completed year is the domicile of the person contributing the greatest proportion of support, without regard to whether the parties are related by blood or marriage.
- At the time of admission to or initial enrollment in any credit course at Montgomery College, each student shall sign a statement affirming domicile and the factual basis for the claim of domicile.
- At the time of each subsequent enrollment, each student shall indicate whether his or her domicile is the same as or different from that affirmed for the last semester in attendance. If facts indicate the domicile has changed, the student shall complete a new statement.
- In determining the adequacy of the factual basis for domicile provided by the student, the College will consider any of the following factors and request evidence for substantiation:
  - ownership or rental of local living quarters
  - substantially uninterrupted physical presence, including the months when the student is not in attendance at the College
  - maintenance in Maryland and in the county of all, or substantially all, of the student's possessions
  - payment of Maryland state and local piggyback income taxes on all taxable income earned, including all taxable income earned outside the state
  - registration to vote in the state and county
  - registration of a motor vehicle in the state, with a local address specified, if the student owns or uses such a vehicle
  - possession of a valid Maryland driver's license, with a local address specified, if the student is licensed anywhere to drive a motor vehicle

A domicile in Montgomery County or the state of Maryland is lost when a new domicile is established for a period of three months at a location outside the county or state.

In addition to the general requirements, the following provisions apply to the specific categories of students indicated:

- Military personnel and their dependents who were domiciliaries of Maryland at the time of entrance into the armed forces and who are stationed outside the state may retain Maryland domicile as long as they do not establish domicile elsewhere.
- Military personnel and their dependents who are on active duty for a period of more than 30 days and whose domicile or permanent duty station is in the State may retain Maryland domicile as long as they are continuously enrolled.
- An individual's immigration status shall not preclude award of Maryland residency under this policy if the individual has the legal capacity to establish domicile in Maryland.
- A student enrolled in a program designated as statewide or regional by the state Board for Community Colleges may be

considered a resident for tuition purposes if domiciled in the approved region for the program.

- A student from outside the state who enrolls as part of a reciprocity agreement negotiated between Maryland and another state may be considered a resident for tuition purposes.
- Students who move to Maryland as an employee (civilian personnel or defense contractor) or a family member of an employee as a result of the Base Realignment and Closure (BRAC) may be eligible to receive a waiver of out-of-state or out-of-county fee.

Students may request a change in residency classification or appeal current classification within a reasonable time of a decision by Montgomery College. Appeals for changes of residency classification must be accompanied by evidence justifying such changes and must be processed prior to the end of the third week of classes or its equivalent in a winter or summer session (20%). Any changes processed after the deadline will be effective the following semester. Appeals shall be submitted in writing to the campus registrar.

Appendix B

Payment Procedures

One-party checks, money orders, bank treasurer/cashier checks, credit cards, debit cards, and cash are accepted in payment of tuition and fees. All personal checks and money orders must be made payable to Montgomery College and should be in the exact amount of tuition and fees. Two-party credit union or bank treasurer/cashier checks payable to the student and Montgomery College also are accepted in payment of tuition and fees.

However, two-party personal and business checks and payroll checks are not accepted in payment of student tuition and fees.

All personal checks must have the account owner's name and bank account number preprinted on the check.

College checks issued to students for financial aid awards are accepted in payment of tuition and fees. Change from such checks is normally available within the time lines established each semester for an appropriate refund issued through regular College refund procedures.

In the event that an invalid check charge has been posted to and remains on the student's account, all future payments of tuition and fees must be made by cash, bank money order, bank treasurer's check, or bank certified check. Financial aid awards also are acceptable in payment of student tuition and/or fees regardless of the student's invalid check status. This restriction may be removed if a letter is received from the bank on which the invalid check was drawn indicating that an error on the part of the bank caused the invalid check.

Please refer to *www.montgomerycollege.edu/creditcost*

Appendix C

Refund Procedures

A. General

1. Students wishing to withdraw officially from a course or courses should consult with the Office of Admissions and Records on their campus to ensure that required procedures are followed.
2. Students who receive financial aid must inform the Student Financial Aid Office if their withdrawal or change of schedule changes the number of credit hours in which they are enrolled. If they have paid their tuition using financial aid funds, they normally will receive no refund since the amount of the refund will be returned to the appropriate financial aid account.
3. The effective date for the calculation of a refund will be the date that the student successfully drops the class via the web or the date that notification is received in the respective campus Office of Admissions and Records. Except in cases where courses are administratively cancelled, no refund will be made unless the student officially withdraws by the posted deadline.

B. Administrative Cancellation

1. When a course is administratively cancelled by the College, students who do not replace the cancelled courses are eligible for a refund of 100 percent of the total tuition and fees that they have paid for the course.

2. Students enrolled in courses that are cancelled by the College are not required to withdraw officially from the courses, as they are required to do in the case of student-initiated withdrawals, either voluntary or involuntary. Appropriate adjustments, including refunds, will be made to their accounts.

C. Involuntary Withdrawal

1. A refund resulting from an involuntary withdrawal will, in most circumstances, be prorated based on the total number of scheduled class meetings and the total number of expired class meetings. The refund is based on tuition only and will not include fees. All fees must be paid prior to receiving a tuition refund. However, in the case of military personnel who are called to active duty or are being transferred because of related troop movement, a 100 percent refund of tuition and fees for the semester within which the effective date of withdrawal falls will be provided upon presentation of appropriate documentation. Please contact the Office of Admissions and Records for more information.

   To be eligible for a refund under the conditions listed below, the student must submit to the Office of Admissions and Records the required notification of withdrawal form and the appropriate substantiating data to support such a withdrawal.

2. A withdrawal is considered involuntary if it results from one of the following:

   a. Entering active duty into the armed services—The request for withdrawal must be substantiated with copies of military orders signed by the individual's commanding officer or another appropriate official to show proof of date of entry.

   b. Illness of the student or in the immediate family of the student (immediate family includes a child, parent, spouse, or other regular member of the individual's household)—A physician's certification must be provided stating that the student's or family member's illness requires the student's withdrawal.

   c. Death of the student or in the immediate family of the student (as defined in item 2b above)—Appropriate substantiation must accompany the request for withdrawal.

   d. Involuntary transfer/change in work hours by the student's employer which precludes continued attendance (military branches of service are considered employers under this section)—The request for withdrawal must be substantiated by appropriate documentation.

D. Voluntary Withdrawal

Voluntary withdrawal is one that results from causes other than those defined above as involuntary. Applicable tuition is refundable only after the student has paid all fees. The College must meet its responsibilities and commitments for faculty, staff, equipment, and supplies based on original registration data. However, the Board of Trustees recognizes that there may be occasions when students have made commitments by registering but, for some personal reason, must of their own volition withdraw during the semester.

Students who officially withdraw by the published deadline date of a course (or courses) are eligible to receive a refund of 100 percent of tuition and fees for the course(s) from which they are withdrawing. The deadline for eligibility for a refund is shown for each course section on the student schedule/invoice.

Students who withdraw from a course (or courses) after the published deadline date of the course(s) are not eligible to receive a refund for that course or courses.

E. Appeals of Refund Decisions

Appeals for exception to the established refund policy, as detailed above, may be made to the assistant director of enrollment services/college registrar or designee by completing a refund appeal form. This form is available in the Office of Admissions and Records located on each campus. **Note: Appeals will not be considered if entered more than 45 days after the close of the semester for which the student is claiming a refund. Campus academic appeals committees hear appeals on academic matters and have no authority to authorize refunds.**

Appendix D

Maryland Higher Education Commission Student Transfer Policies

.01 Scope and Applicability

This chapter applies only to public institutions of higher education.

.02 Definitions

A. In this chapter, the following terms have the meanings indicated.

B. Terms defined.

(1) "A.A. degree" means the Associate of Arts degree.

(2) "A.A.S. degree" means the Associate of Applied Sciences degree.

(3) "Arts" means courses that examine aesthetics and the development of the aesthetic form and explore the relationship between theory and practice. Courses in this area may include fine arts, performing and studio arts, appreciation of the arts, and history of the arts.

(4) "A.S. degree" means the Associate of Sciences degree.

(5) "Biological and physical sciences" means courses that examine living systems and the physical universe. They introduce students to the variety of methods used to collect, interpret, and apply scientific data, and to an understanding of the relationship between scientific theory and application.

(6) "English composition courses" means courses that provide students with communication knowledge and skills appropriate to various writing situations, including intellectual inquiry and academic research.

(7) "General education" means the foundation of the higher education curriculum providing a coherent intellectual experience for all students.

(8) "General education program" means a program that is designed to:

(a) Introduce undergraduates to the fundamental knowledge, skills, and values that are essential to the study of academic disciplines;

(b) Encourage the pursuit of life-long learning; and

(c) Foster the development of educated members of the community and the world.

(9) "Humanities" means courses that examine the values and cultural heritage that establish the framework for inquiry into the meaning of life. Courses in the humanities may include the language, history, literature, and philosophy of Western and other cultures.

(10) "Mathematics" means courses that provide students with numerical, analytical, statistical, and problem-solving skills.

(11) "Native student" means a student whose initial college enrollment was at a given institution of higher education and who has not transferred to another institution of higher education since that initial enrollment.

(12) "Parallel program" means the program of study or courses at one institution of higher education which has comparable objectives as those at another higher education institution, for example, a transfer program in psychology in a community college is definable as a parallel program to a baccalaureate psychology program at a 4-year institution of higher education.

(13) "Receiving institution" means the institution of higher education at which a transfer student currently desires to enroll.

(14) "Recommended transfer program" means a planned program of courses, both general education and courses in the major, taken at a community college, which is applicable to a baccalaureate program at a receiving institution, and ordinarily the first two years of the baccalaureate degree.

(15) "Sending institution" means the institution of higher education of most recent previous enrollment by a

transfer student at which transferable academic credit was earned.

(16) "Social and behavioral sciences" means courses that examine the psychology of individuals and the ways in which individuals, groups, or segments of society behave, function, and influence one another. The courses include, but are not limited to, subjects which focus on:

(a) History and cultural diversity;

(b) Concepts of groups, work, and political systems;

(c) Applications of qualitative and quantitative data to social issues; and

(d) Interdependence of individuals, society, and the physical environment.

(17) "Transfer student" means a student entering an institution for the first time having successfully completed a minimum of 12 semester hours at another institution which is applicable for credit at the institution the student is entering.

.03 General Education Requirements for Public Institutions

A. While public institutions have the autonomy to design their general education program to meet their unique needs and mission, that program shall conform to the definitions and common standards in this chapter. A public institution shall satisfy the general education requirement by:

(1) Requiring each program leading to the A.A. or A.S. to include not less than 30 and not more than 36 semester hours, and each baccalaureate degree program to include not less than 40 and not more than 46 semester hours of required core courses, with the core requiring, at a minimum, course work in each of the following five areas:

(a) Arts and humanities,

(b) Social and behavioral sciences,

(c) Biological and physical sciences,

(d) Mathematics, and

(e) English composition; or

(2) Conforming with COMAR 13B.02.02.16D(2)(b)-(c).

B. Each core course used to satisfy the distribution requirements of §A(1) of this regulation shall carry at least 3 semester hours.

C. General education programs of public institutions shall require at least:

(1) One course in each of two disciplines in arts and humanities;

(2) One course in each of two disciplines in social and behavioral sciences;

(3) Two science courses, at least one of which shall be a laboratory course;

(4) One course in mathematics at or above the level of college algebra; and

(5) One course in English composition.

D. Interdisciplinary and Emerging Issues.

(1) In addition to the five required areas in §A of this regulation, a public institution may include up to 8 semester hours in a sixth category that addresses emerging issues that institutions have identified as essential to a full program of general education for their students. These courses may:

(a) Be integrated into other general education courses or may be presented as separate courses; and

(b) Include courses that:

(i) Provide an interdisciplinary examination of issues across the five areas; or

(ii) Address other categories of knowledge, skills, and values that lie outside of the five areas.

(2) Public institutions may not include the courses in this section in a general education program unless they provide academic content and rigor equivalent to the areas in §A(1) of this regulation.

E. General education programs leading to the A.A.S. degree shall include at least 20 semester hours from the same course list designated by the sending institution for the A.A. and A.S. degree The A.A.S. degree shall include at least one 3-semester-hour course from each of the five areas listed in §A(1) of this regulation.

F. A course in a discipline listed in more than one of the areas of general education may be applied only to one area of general education.

G. A public institution may allow a speech communication or foreign language course to be part of the arts and humanities category.

H. Composition and literature courses may be placed in the arts and humanities area if literature is included as part of the content of the course.

I. Public institutions may not include physical education skills courses as part of the general education requirements.

J. General education courses shall reflect current scholarship in the discipline and provide reference to theoretical frameworks and methods of inquiry appropriate to academic disciplines.

K. Courses that are theoretical may include applications, but all applications courses shall include theoretical components if they are to be included as meeting general education requirements.

L. Public institutions may incorporate knowledge and skills involving the use of quantitative data, effective writing, information retrieval, and information literacy when possible in the general education program.

M. Notwithstanding §A(1) of this regulation, a public 4-year institution may require 48 semester hours of required core courses if courses upon which the institution's curriculum is based carry 4 semester hours.

N. Public institutions shall develop systems to ensure that courses approved for inclusion on the list of general education courses are designed and assessed to comply with the requirements of this chapter.

.04 Transfer of General Education Credit

A. A student transferring to one public institution from another public institution shall receive general education credit for work completed at the student's sending institution as provided by this chapter.

B. A completed general education program shall transfer without further review or approval by the receiving institution and without the need for a course-by-course match.

C. Courses that are defined as general education by one institution shall transfer as general education even if the receiving institution does not have that specific course or has not designated that course as general education.

D. The receiving institution shall give lower-division general education credits to a transferring student who has taken any part of the lower-division general education credits described in Regulation .03 of this chapter at a public institution for any general education courses successfully completed at the sending institution.

E. Except as provided in Regulation .03M of this chapter, a receiving institution may not require a transfer student who has completed the requisite number of general education credits at any public college or university to take, as a condition of graduation, more than 10–16 additional semester hours of general education and specific courses required of all students at the receiving institution, with the total number not to exceed 46 semester hours. This provision does not relieve students of the obligation to complete specific academic program requirements or course prerequisites required by a receiving institution.

F. A sending institution shall designate on or with the student transcript those courses that have met its general education requirements, as well as indicate whether the student has completed the general education program.

G. A.A.S. degrees.

(1) While there may be variance in the numbers of hours of general education required for A.A., A.S., and A.A.S. degrees at a given institution, the courses identified as meeting general education requirements for all degrees shall come from the same general education course list and exclude technical or career courses.

(2) An A.A.S. student who transfers into a receiving institution with fewer than the total number of general education credits designated by the receiving institution shall complete the difference in credits according to the distribution as designated by the receiving institution. Except as provided in

Regulation .03M of this chapter, the total general education credits for baccalaureate degree-granting public receiving institutions may not exceed 46 semester hours.

H. Student responsibilities. A student is held:

(1) Accountable for the loss of credits that:

(a) Result from changes in the student's selection of the major program of study,

(b) Were earned for remedial course work, or

(c) Exceed the total course credits accepted in transfer as allowed by this chapter; and

(2) Responsible for meeting all requirements of the academic program of the receiving institution.

.05 Transfer of Nongeneral Education Program Credit

A. Transfer to Another Public Institution.

(1) Credit earned at any public institution in the state is transferable to any other public institution if the:

(a) Credit is from a college or university parallel course or program;

(b) Grades in the block of courses transferred average 2.0 or higher; and

(c) Acceptance of the credit is consistent with the policies of the receiving institution governing native students following the same program.

(2) If a native student's "D" grade in a specific course is acceptable in a program, then a "D" earned by a transfer student in the same course at a sending institution is also acceptable in the program. Conversely, if a native student is required to earn a grade of "C" or better in a required course, the transfer student shall also be required to earn a grade of "C" or better to meet the same requirement.

B. Credit earned in or transferred from a community college is limited to:

(1) one half the baccalaureate degree program requirement, but may not be more than 70 semester hours; and

(2) The first 2 years of the undergraduate education experience.

C. Nontraditional Credit.

(1) The assignment of credit for AP, CLEP, or other nationally recognized standardized examination scores presented by transfer students is determined according to the same standards that apply to native students in the receiving institution, and the assignment shall be consistent with the State minimum requirements.

(2) Transfer of credit from the following areas shall be consistent with COMAR 13B.02.02. and shall be evaluated by the receiving institution on a course-by-course basis:

(a) Technical courses from career programs;

(b) Course credit awarded through articulation agreements with other segments or agencies;

(c) Credit awarded for clinical practice or cooperative education experiences; and

(d) Credit awarded for life and work experiences.

(3) The basis for the awarding of the credit shall be indicated on the student's transcript by the receiving institution.

(4) The receiving institution shall inform a transfer student of the procedures for validation of course work for which there is no clear equivalency. Examples of validation procedures include ACE recommendations, portfolio assessment, credit through challenge, examinations, and satisfactory completion of the next course in sequence in the academic area.

(5) The receiving baccalaureate degree-granting institution shall use validation procedures when a transferring student successfully completes a course at the lower-division level that the receiving institution offers at the upper-division level. The validated credits earned for the course shall

be substituted for the upper-division course.

D. Program Articulation.

(1) Recommended transfer programs shall be developed through consultation between the sending and receiving institutions. A recommended transfer program represents an agreement between the two institutions that allows students aspiring to the baccalaureate degree to plan their programs. These programs constitute freshman/sophomore level course work to be taken at the community college in fulfillment of the receiving institution's lower division course work requirement.

(2) Recommended transfer programs in effect at the time that this regulation takes effect, which conform to this chapter, may be retained.

.06 Academic Success and General Well-Being of Transfer Students

A. Sending Institutions.

(1) Community colleges shall encourage their students to complete the associate degree or to complete 56 hours in a recommended transfer program which includes both general education courses and courses applicable toward the program at the receiving institution.

(2) Community college students are encouraged to choose as early as possible the institution and program into which they expect to transfer.

(3) The sending institution shall:

(a) Provide to community college students information about the specific transferability of courses at 4-year colleges;

(b) Transmit information about transfer students who are capable of honors work or independent study to the receiving institution; and

(c) Promptly supply the receiving institution with all the required documents if the student has met all financial and other obligations of the sending institution for transfer.

B. Receiving Institutions.

(1) Admission requirements and curriculum prerequisites shall be stated explicitly in institutional publications.

(2) A receiving institution shall admit transfer students from newly established public colleges that are functioning with the approval of the Maryland Higher Education Commission on the same basis as applicants from regionally accredited colleges.

(3) A receiving institution shall evaluate the transcript of a degree-seeking transfer student as expeditiously as possible, and notify the student of the results not later than mid-semester of the student's first semester of enrollment at the receiving institution, if all official transcripts have been received at least 15 working days before mid-semester. The receiving institution shall inform a student of the courses which are acceptable for transfer credit and the courses which are applicable to the student's intended program of study.

(4) A receiving institution shall give a transfer student the option of satisfying institutional graduation requirements that were in effect at the receiving institution at the time the student enrolled as a freshman at the sending institution. In the case of major requirements, a transfer student may satisfy the major requirements in effect at the time when the student was identifiable as pursuing the recommended transfer program at the sending institution. These conditions are applicable to a student who has been continuously enrolled at the sending institution.

.07 Programmatic Currency

A. A receiving institution shall provide to the community college current and accurate information on recommended transfer programs and the transferability status of courses. Community college students shall have access to this information.

B. Recommended transfer programs shall be developed with each community college whenever new baccalaureate programs

are approved by the degree-granting institution.

C. When considering curricular changes, institutions shall notify each other of the proposed changes that might affect transfer students. An appropriate mechanism shall be created to ensure that both 2- and 4-year public colleges provide input or comments to the institution proposing the change. Sufficient lead time shall be provided to effect the change with minimum disruption. Transfer students are not required to repeat equivalent course work successfully completed at a community college.

.08 Transfer Mediation Committee

A. There is a Transfer Mediation Committee, appointed by the Secretary, which is representative of the public four year colleges and universities and the community colleges.

B. Sending and receiving institutions that disagree on the transferability of general education courses as defined by this chapter shall submit their disagreements to the Transfer Mediation Committee. The Transfer Mediation Committee shall address general questions regarding existing or past courses only, not individual student cases, and shall also address questions raised by institutions about the acceptability of new general education courses. As appropriate, the Committee shall consult with faculty on curricular issues.

C. The findings of the Transfer Mediation Committee are considered binding on both parties.

.09 Appeal Process

A. Notice of Denial of Transfer Credit by a Receiving Institution.

(1) Except as provided in §A(2) of this regulation, a receiving institution shall inform a transfer student in writing of the denial of transfer credit not later than mid-semester of the transfer student's first semester, if all official transcripts have been received at least 15 working days before mid-semester.

(2) If transcripts are submitted after 15 working days before mid-semester of a student's first semester, the receiving institution shall inform the student of credit denied within 20 working days of receipt of the official transcript.

(3) A receiving institution shall include in the notice of denial of transfer credit:

(a) A statement of the student's right to appeal; and

(b) A notification that the appeal process is available in the institution's catalog.

(4) The statement of the student's right to appeal the denial shall include notice of the time limitations in §B of this regulation.

B. A student believing that the receiving institution has denied the student transfer credits in violation of this chapter may initiate an appeal by contacting the receiving institution's transfer coordinator or other responsible official of the receiving institution within 20 working days of receiving notice of the denial of credit.

C. Response by Receiving Institution.

(1) A receiving institution shall:

(a) Establish expeditious and simplified procedures governing the appeal of a denial of transfer of credit; and

(b) Respond to a student's appeal within 10 working days.

(2) An institution may either grant or deny an appeal. The institution's reasons for denying the appeal shall be consistent with this chapter and conveyed to the student in written form.

(3) Unless a student appeals to the sending institution, the written decision in §C(2) of this regulation constitutes the receiving institution's final decision and is not subject to appeal.

D. Appeal to Sending Institution.

(1) If a student has been denied transfer credit after an appeal to the receiving institution, the student may request the sending institution to intercede on the student's behalf by contacting the transfer coordinator of the sending institution.

(2) A student shall make an appeal to the sending institution within 10 working

days of having received the decision of the receiving institution.

E. Consultation between Sending and Receiving Institutions.

(1) Representatives of the two institutions shall have 15 working days to resolve the issues involved in an appeal.

(2) As a result of a consultation in this section, the receiving institution may affirm, modify, or reverse its earlier decision.

(3) The receiving institution shall inform a student in writing of the result of the consultation.

(4) The decision arising out of a consultation constitutes the final decision of the receiving institution and is not subject to appeal.

.10 Periodic Review

A. Report by Receiving Institution.

(1) A receiving institution shall report annually the progress of students who transfer from two year and four year institutions within the State to each community college and to the Secretary of the Maryland Higher Education Commission.

(2) An annual report shall include ongoing reports on the subsequent academic success of enrolled transfer students, including graduation rates, by major subject areas.

(3) A receiving institution shall include in the reports comparable information on the progress of native students.

B. Transfer Coordinator. A public institution of higher education shall designate a transfer coordinator, who serves as a resource person to transfer students at either the sending or receiving campus. The transfer coordinator is responsible for overseeing the application of the policies and procedures outlined in this chapter and interpreting transfer policies to the individual student and to the institution.

C. The Maryland Higher Education Commission shall establish a permanent Student Transfer Advisory Committee that meets regularly to review transfer issues and recommend policy changes as needed. The Student Transfer Advisory Committee shall address issues of interpretation and implementation of this chapter.

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