

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 is authorized by the Maryland Higher Education Commission (MHEC) to offer four degrees (associate of arts, associate of science, associate of applied science, and associate of arts in teaching) and certificates. In addition, the College recognizes students who satisfactorily complete certain course sequences with letters of recognition.

Some curricula are offered at all campuses, whereas others 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 TP for Takoma Park. If there is no campus designation, all campuses may offer the curriculum. Students may take courses offered on any campus to meet the requirements of the curriculum in which they are enrolled.

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 the General Education section beginning on page 59 for more information); courses in a specific track or skill area; and, in some cases, electives. Only officially approved tracks appear on transcripts.

Associate of Arts (A.A.). 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. Montgomery College awards the A.A. in four programs—arts and sciences, business, computer science and technologies, and general studies.

Within the first three of these four programs, Montgomery College offers tracks, which allow students to focus their studies in specific areas (for example, arts and sciences program—music track).

Associate of Science (A.S.). 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. Montgomery College awards the A.S. in engineering science, nursing, and science. Within the engineering science and science programs, Montgomery College offers tracks, which allow students to focus their studies in specific areas (for example, engineering science program— aerospace engineering track).

Associate of Applied Science (A.A.S.). This degree recognizes mastery of vocational-technical occupational skills and is intended for those seeking immediate employment opportunities. However, enrollment in one of these programs does not preclude a student from transferring courses to four-year institutions offering upper-division programs in related areas. Within some A.A.S. programs, Montgomery College offers tracks, which allow students to focus their studies in specific areas (for example, management program—marketing track).

Associate of Arts in Teaching (A.A.T.). This degree recognizes mastery in a core of professional education course work and fieldwork experiences appropriate for the first two years of teacher preparation. The program is intended to prepare students to transfer to an elementary education program at a four-year college or university in the state of Maryland. Students who receive the A.A.T. will have passed the Praxis I: Pre-Professional Skills Test and will have fulfilled their General Education requirements.

The A.A.T. 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.

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 pertinent to specific career areas. Upon successful completion of these courses and application to the director of records and registration, the letter of recognition will be issued.

Students seeking only a letter of recognition, who are not planning to pursue a certificate or associate's degree at Montgomery College, are considered non-degree-seeking students and are not eligible for financial aid.

Choosing a Curriculum

Curricula at Montgomery 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. Change from one curriculum to another requires approval of an academic adviser or counselor. Counselors can assist in determining whether a change in curriculum may result in a loss of credit.

Individual curricula are summarized in the table on pages 64–65 and described in detail beginning on page 67.

A student who is interested in a curriculum not listed in this section should follow the general studies program to create a program that will meet his or her interests and needs. The

student should work closely with a counselor or adviser to create this program.

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 Montgomery College campus.

Transfer to a Four-Year Institution

For students who plan to continue their education and transfer in a specific discipline (e.g., business administration, computer science, or engineering), Montgomery College offers programs that provide the first two years of a four-year degree program as well as a general studies curriculum.

Students intending to transfer to four-year institutions after completing their studies at Montgomery College should plan their programs carefully. Counselors and academic advisers will assist students in planning; however, it is the responsibility of students to select a transfer institution and to meet the requirements for transfer to that institution. Departure from the required pattern of lower-division courses required by the transfer institution may interfere with admission and normal progress toward a bachelor's degree. Students are

encouraged to meet with a counselor or academic adviser to determine the most appropriate transfer plan.

Articulation Agreements

To assist students in smooth transfer, Montgomery College and many colleges and universities have developed articulation agreements. These agreements detail curricula and policies that permit students to undertake associate's degrees at Montgomery College and complete bachelor's degrees at four-year institutions with little or no loss of credit.

Transfer Guidance

Detailed transfer guidance and information on schools in the Maryland state system and other area colleges and universities can be found in the Career/Transfer Centers on all three campuses. Students should also consult the appropriate catalogs or bulletins, attend Transfer Information Days held during the fall and spring semesters on each campus, and/or meet with an adviser at the transfer institution. Information is also available on the Web:

- The Montgomery College transfer Web site (www.montgomerycollege.edu/transfer) includes information to help students select and apply to colleges, obtain financial aid, and navigate the transfer process.
- ARTSYS (<http://artweb.usmd.edu>), the articulation system for Maryland colleges and universities, indicates which Montgomery College courses will be accepted for credit at transfer institutions (Maryland public colleges and universities and some private colleges).
- Maryland's transfer Web site (<http://mdtransfer.usmd.edu>) contains FASTLinks to Maryland colleges and universities participating in ARTSYS.

Technical and Semiprofessional Training

For students who have specific technical or semiprofessional career interests and wish to complete two years of study, there are a wide range of occupational programs. In addition to

highly specialized technical courses, these degree programs contain a strong component of general education courses to increase students' breadth of knowledge. The College also offers non-degree 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

General Education requirements are a part of all degree programs. These required courses provide students with a common, well-grounded educational experience to support and complement the courses in their major. In addition to specific course content, General Education requirements assist students in the development of critical literacy; respect for others; creative expression; effective communication, both written and oral; and respect for the intellectual community tempered with skepticism about unchallenged "truths."

The General Education program at Montgomery College conforms with the MHEC Academic Regulations on General Education and Transfer. *These statewide regulations guarantee that students completing Montgomery College's General Education program will receive credit for lower level general education courses at any public institution in the state* (see Appendix G for MHEC regulations).

The General Education requirements include foundation courses and distribution courses. These courses are identified in italics in each curriculum.

Foundation Courses

The foundation courses of the General Education program are those courses that provide students with the skills necessary to succeed in college-level courses and in life. They are courses that all degree-seeking and/or transfer students must complete successfully before moving into the workplace or to a transfer institution. These

foundation courses, in English composition, health, mathematics, and speech, are common to all degree categories. They are identified in the table below.

Distribution Courses

The distribution component of the General Education program provides breadth to the student's Montgomery College education. The four distribution categories are arts, behavioral and social sciences, humanities, and natural sciences. Each degree category has specific distribution requirements outlined in the table below.

For all A.A. and A.S. curricula, the two required behavioral and social sciences distri-

bution courses must be from different disciplines (courses from the distribution list on page 61 with different designators [for example, AN and PS]). For all A.A. and A.A.S. curricula, at least one lab science course must be taken to fulfill the natural sciences distribution requirement.

Multicultural Requirement

Courses designated as multicultural provide students with exposure to non-Western culture, history, literature, or religion, or to the experiences of women and/or minorities in America. In all A.A. and A.S. curricula, students are required to select at least one multicultural course.

The General Education Program

Component	Number of Credits Required		
	A.A.S.	A.A.	A.S.
Foundation			
EN 102 or 109	3	3	3
Any HE course*	1	1	1
MA 110 or higher	3	3	3
SP 108, 112, or 212	3	3	3
Distribution			
Arts		3	3
Either arts or humanities	3	3	
Behavioral and social sciences	3	6 [†]	6 [†]
Humanities		3	3
Natural sciences	4 [‡]	7 [‡]	8
Total Credits	20	32	30

Note: In all A.A. and A.S. curricula, students are required to select at least one course designated a multicultural course on the distribution list.

*HE 204 is a multicultural course.

[†]The two three-credit-hour courses must be from different disciplines.

[‡]At least one lab science course must be taken to fulfill this requirement.

Distribution Courses

Arts Distribution (ARTD)

AR 101	Drawing I
AR 102	Drawing II
AR 103	Design I
AR 104	Design II
AR 105	Color
*AR 107	Art History I
AR 108	Art History II
AR 121	Ceramics I
AR 122	Ceramics II
AR 123	Crafts (R&TP)
AR 124	Enameling I (R)
AR 125	Enameling II (R)
*AR 127	Art Appreciation (Art in the Culture)
*AR 130	Survey of Asian Art
AR 203	Photographic Expression I (G&TP)
AR 204	Photographic Expression II (G&TP)
AR 207	American Art
*AR 208	Survey of African Art
AR 209	History of Architecture I
AR 210	History of Architecture II
*AR 213	World Woodcut and Relief Traditions
AR 227	Weaving and Textiles (TP)
AR 229	Jewelry and Metalsmithing (R)
CG 120	Computer Graphics: Art and Illustration I
DN 100	Introduction to Dance (R&TP)
DN 102	Ballet II
DN 104	Modern Dance II
EN 218	Introduction to Creative Writing of Fiction
EN 223	Introduction to Creative Writing of Poetry
ID 211	Historic Interiors I
ID 212	Historic Interiors II
IS 273	Integrated Arts
MU 110	Listening to Music
*MU 111	World Music
MU 128	Exploring Contemporary Music Synthesis—Introduction (R)
*MU 133	History of Jazz (R)
*MU 136	American Popular Music
MU 139	Introduction to Music Theory (R)
PG 150	Photography I
TH 108	Introduction to the Theatre
TH 109	Fundamentals of Acting (R&TP)
TR 104	Media Appreciation (R)

Behavioral and Social Sciences Distribution (BSSD)

*AN 101	Introduction to Social and Cultural Anthropology
*AN 206	World Ethnology (R)
*CJ 110	Administration of Justice (R)
EC 105	Basic Economics
EC 201	Principles of Economics I
EC 202	Principles of Economics II
GE 101	Introduction to Geography
GE 102	Cultural Geography
GE 103	Economic Geography
GE 104	Physical Geography (R)
*GE 110	Global Geography
GE 201	Political Geography
HP 257	Mathematics and Western Culture
HP 262	Current Issues in Experimental Psychology
HS 141	History of Mass Communications (R)
*HS 212	Crises of the 20th Century
PS 101	American Government
PS 102	State and Local Government
PS 105	Introduction to Political Science
*PS 121	Political Ideologies
*PS 201	Comparative Politics and Governments
*PS 203	International Relations
PY 102	General Psychology
PY 203	Human Growth and Development during the Life Span
PY 204	Introduction to the Psychology of Personality
PY 206	Psychology of Human Sexuality
*PY 207	Psychology of Women
PY 211	Social Psychology
PY 215	Child Psychology
PY 216	Adolescent Psychology
PY 221	Introduction to Abnormal Psychology
*SO 101	Introduction to Sociology
SO 104	Families in Crisis
SO 105	Social Problems and Issues
*SO 108	Women and Men in American Society
*SO 204	Marriage and the Family
SO 206	Sociology of Personality
*SO 208	Minorities in American Society
*SO 210	Aging in America
SO 212	Sport in American Society (R)
SO 255	Death and Dying
*SS 101	Social Science—Integrated Course (R)

* Satisfies the multicultural requirement.

Humanities Distribution (HUMD)

* EC 103	The Evolution of Economic Societies	* HS 117	World History: A Comparative Survey (from A.D. 1500)
EN 121	Introduction to Language	HS 118	History of Sport in America
* EN 122	Mythology: The Secret Language (R&TP)	HS 120	Technology and Culture in the Western World (R)
* EN 135	The Black Experience in American Literature	* HS 129	The History of African Americans to 1865
EN 190	Introduction to Literature	* HS 130	The History of African Americans Since 1865
EN 201	Introduction to World Literature	* HS 137	History of Asian Americans
EN 202	Introduction to World Literature	HS 151	History of Europe (to 17th century)
* EN 208	Women in Literature	HS 161	History of Europe (from 17th century)
EN 209	The Bible as Literature (R&TP)	* HS 186	History of the Ancient World
EN 210	Survey of American Nature Writing	HS 201	History of the United States, A Survey Course (to 1865)
EN 211	A Survey of American Literature (to mid-19th century)	HS 202	History of the United States, A Survey Course (from 1865)
EN 212	A Survey of American Literature (from mid-19th century)	* HS 203	Latin American History
EN 213	Survey of British Literature (to mid-18th century)	* HS 205	History of Russia
EN 214	Survey of British Literature (from mid-18th century)	* HS 207	East Asian Civilization
* EN 215	Masterpieces of Oriental Literature	* HS 208	Modern Asia
EN 216	The American Novel	HS 225	The History of England (to 1688)
EN 221	The Short Story	HS 226	The History of England (from 1688)
EN 230	Introduction to Modern Drama	PL 180	Morality and Contemporary Law
EN 231	Introduction to Modern Poetry (R)	PL 190	Elementary Logic and Semantics
FR 101	Elementary French I	PL 201	Introduction to Philosophy
FR 102	Elementary French II	PL 202	Introduction to the Study of Ethics
FR 201	Intermediate French I	* PL 203	Introduction to the Study of Religion
FR 202	Intermediate French II	PL 205	Philosophy in Literature
FR 207	Readings in French Literature	PL 206	Structure and Evolution of the Universe (R)
FR 208	Readings in French Literature	RU 101	Elementary Russian I (R)
GR 101	Elementary German I	RU 102	Elementary Russian II (R)
GR 102	Elementary German II	RU 201	Intermediate Russian I (R)
GR 201	Intermediate German I	RU 202	Intermediate Russian II (R)
GR 202	Intermediate German II	SN 101	Elementary Spanish I
HP 259	Modern Western Intellectual Tradition	SN 102	Elementary Spanish II
HP 264	Graeco-Roman Culture (R)	SN 201	Intermediate Spanish I
* HS 110	Women in the Western World (R)	SN 202	Intermediate Spanish II
* HS 112	Women in World History	SN 215	Advanced Spanish Conversation and Composition
* HS 113	Alternative Lifestyles: 19th Century American Utopias	SN 216	Advanced Readings in Spanish Literature
* HS 114	The World in the 20th Century	* WS 101	Introduction to Women's Studies
* HS 116	World History: A Comparative Survey (to A.D. 1500)		

* Satisfies the multicultural requirement.

Natural Sciences Distribution**Natural Sciences Distribution
with Lab (NSLD)**

AS	101	Introductory Astronomy
AS	102	Introduction to Modern Astronomy (R)
BI	101	General Biology
BI	102	General Biology
BI	105B	Environmental Biology Laboratory (must be taken with BI 105A for NSLD credit)
BI	107	Principles of Biology I
BI	108	Principles of Biology II
BI	111	Botany I
BI	204	Human Anatomy and Physiology I
BI	205	Human Anatomy and Physiology II
BI	207	Ecology
BI	208	Field Ecology (Note: This is a three-credit course.)
CH	101	Principles of Chemistry I
CH	102	Principles of Chemistry II
CH	103	Chemistry for the Health Sciences (G&TP)
CH	109B	Chemistry and Society Laboratory (must be taken with CH 109A for NSLD credit)
CH	120	Essentials of Organic and Biochemistry
GL	101	Physical Geology

GL	102	Historical Geology
ME	101	Meteorology: An Introduction to Weather (R)
PC	101	Physical Science I
PC	102	Physical Science II
PH	110	Sound and Lights in the Arts (R)
PH	151	Technical Physics I
PH	152	Technical Physics II
PH	203	General Physics I
PH	204	General Physics II
PH	262	Electricity and Magnetism
PH	263	Waves, Optics, and Modern Physics

**Natural Sciences Distribution
without Lab (NSND)**

AN	105	Introduction to Physical Anthropology and Archaeology (G&R)
BI	104	Understanding Viruses
BI	105A	Environmental Biology
BI	109	Natural Science of the Chesapeake Bay
CH	109A	Chemistry and Society
ES	100	Introduction to Engineering Design
FM	103	Introduction to Nutrition (R)
PH	105	Conceptual Physics
PH	161	General Physics I: Mechanics and Heat



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Curricula Summary

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Statewide Programs

The MHEC approves the designation of some curricula at community colleges as statewide programs. Those programs are available to students in other areas where the local community college does not offer the same program. Registered students are then eligible for tuition differential between the in-county and out-of-county costs, providing the funds have been made available through the state budget process. Listed below are statewide programs at other community colleges that are not offered at Montgomery College.

Allegany College of Maryland

- Dental Hygiene
- Directed Technology (Travel/Tourism)
- Forest Technology
- Health Care Technician
- Massage Therapy
- Occupational Therapy
- Physician Assistant
- Practical Nursing
- Respiratory Therapy
- Therapeutic Massage

Anne Arundel Community College

- Medical Assisting
- Physician Assistant

CCBC—Catonsville

- Aviation Management
- Environmental Technology
- Interpreter Preparation
- Mortuary Science
- Occupational Safety and Health Technology
- Occupational Therapy Assistant
- Recreation, Parks and Leisure Studies

Charles County Community College

- Practical Nursing

CCBC—Dundalk

- Chemical Dependency Counseling
- Industrial Maintenance Technology
- Labor Studies
- Retail Floristry

CCBC—Essex

- Physician Assistant
- Radiation Therapy Assistant

- Respiratory Care Technology
- Veterinary Technology

Frederick Community College

- Aviation Maintenance Technology
- Park Operation Management
- Practical Nursing
- Respiratory Therapy

Garrett Community College

- Adventure Sports Management
- Agricultural Management Technology
- Nature Resources and Wildlife Technology

Harford Community College

- Electroneurodiagnostic Technology
- Practical Nursing
- Science Laboratory Technology

Howard Community College

- Biomedical Engineering
- Cardiac Monitoring Analysis

Prince George's Community College

- Forensic Science
- Nuclear Medicine Technology
- Practical Nursing
- Respiratory Therapist

Montgomery County residents interested in enrolling in any of the above programs must contact the admissions office of the college offering the program.

Montgomery College programs approved as statewide are:

- Biotechnology (A.A.S.)
- Diagnostic Medical Sonography (A.A.S. and Certificate)
- Fire Science (A.A.S. and Certificate)
- Technical Writing (Certificate)

The MHEC has designated the following Montgomery College programs for the Health Manpower Shortage Program: Health Information Technology, Nursing, Physical Therapist Assistant, Radiologic (X-Ray) Technology, and Surgical Technology. For more information, contact the Office of Admissions, Records, and Registration.

ACCOUNTING

Accounting A.A.S. (G, R)

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

AC 201	Principles of Accounting I	4
BA 101	Introduction to Business	
	or	
MG 101	Principles of Management	3
	<i>EC elective*</i>	3
EN 101	Techniques of Reading and Writing	3
	<i>Mathematics foundation</i>	3

Second Semester

AC 202	Principles of Accounting II	4
	CA or CS elective	3
	<i>English foundation</i>	3
	<i>Speech foundation</i>	3
	<i>Arts or humanities distribution</i>	3

Third Semester

AC 207	Intermediate Accounting I	4
	<i>Health foundation</i>	1 (3)
MG 201	Business Law I	3
	Electives†	6

Fourth Semester

AC 208	Intermediate Accounting II	4
AC 219	Business Finance	3
	Elective†	3
	<i>Natural sciences lab distribution</i>	4
Total credit hours		60 (62)

*Select EC 105, EC 201, or EC 202.

†Select any accounting course numbered 209 or higher (except AC 219), MG 202, or a statistics course (BA 210 or MA 116).

Accounting Certificate (G, R)

The accounting certificate curriculum is designed to serve those students who desire to upgrade their professional competence but do not want to complete the A.A.S. 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

AC 201	Principles of Accounting I	4
AC 202	Principles of Accounting II	4
AC 207	Intermediate Accounting I	4

Electives

Select four courses from accounting courses numbered 208 or higher and MG 201.

Total credit hours 24 (25)

ADVERTISING ART

There are two tracks leading to the A.A.S. in advertising art: advertising design and illustration. In addition, two certificate curricula are offered: (1) computer graphics: art and animation and (2) graphic design with the computer.

Appropriate courses may be used toward development of marketable skills, for avocational interests, or for possible transfer. A student interested in any of the A.A.S. or certificate curricula should consult an academic

Advertising Art (*continued*)

adviser in the Visual Communications Technologies Department.

Advertising Design (R)*Advertising Art A.A.S.*

The advertising design track prepares the student for employment in the field of graphic communication. Emphasis is placed on the creative application of design principles to problems in advertising and communication.

First Semester

AA 121	Advertising Art Fundamentals	3
AA 127	Visual Communication Production I	3
AR 101	<i>Drawing I</i>	3
AR 103	Design I	3
EN 101	Techniques of Reading and Writing	3

Second Semester

AA 110	Computer Essentials for the Graphic Designer	4
	or	
AA 111	Introduction to the Macintosh	1
AA 124	Advertising Design I	3
AA 134	Illustration I	3
AR 102	Drawing II	3
	<i>English foundation</i>	3

Third Semester

AA 212	Publication Design with QuarkXPress	4
AA 216	Digital Imaging with Illustrator	4
AA 223	Advertising Design II	3
AR 107	Art History I	3
	<i>Health foundation</i>	1
	<i>Mathematics foundation</i>	3

Fourth Semester

AA 224	Advertising Design III	3
AR 108	Art History II	3
	<i>Speech foundation</i>	3
	<i>Behavioral and social sciences distribution</i>	3
	<i>Natural sciences lab distribution</i>	4

Total credit hours 62 (65)

Computer Graphics: Art and Animation Certificate (R)

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.

AR 101	Drawing I	3
AR 103	Design I	3
CG 120	Computer Graphics: Art and Illustration I	4
CG 121	Computer Graphics: Art and Illustration II	4
CG 210	Computer Animation and Illustration	4
CG 222	Computer Graphics: 3-D Modeling	4
TR 101	Digital Video/Audio	4
	Electives*	6-8

Total credit hours 32-34

*Select six to eight credit hours from the following list: AA 110, AA 121, AA 124, AA 134, AA 214, AA 216, AA 224, AA 225, AR 102, AR 105, AR 201, AR 205, AR 224, CA 161, CG 226, CT 183, HP 251, and PG 165. AA 224 and CT 183 have 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 AA 110 and AA 214 as electives.

Graphic Design with the Computer Certificate (R)

This certificate curriculum prepares the student for immediate employment in graphic design using the computer in today's electronic applied art and design studio. Courses are designed to provide from introductory to advanced training in the skills necessary to succeed as a professional in this industry.

Required Courses for Print Media Track (13–16 credit hours)

AA 110	Computer Essentials for the Graphic Designer	4
or		
AA 111	Introduction to the Macintosh	1
AA 212	Publication Design with QuarkXPress	4
AA 214	Digital Imaging with Photoshop	4
AA 216	Digital Imaging with Illustrator	4

Required Courses for Web Design Track (13–16 credit hours)

AA 110	Computer Essentials for the Graphic Designer	4
or		
AA 111	Introduction to the Macintosh	1
AA 214	Digital Imaging with Photoshop	4
AA 216	Digital Imaging with Illustrator	4
AA 218	Graphic Design for the Web	4

Elective Courses* (6–8 credit hours)

AA 121	Advertising Art Fundamentals	3
AA 124	Advertising Design I	3
AA 212	Publication Design with QuarkXPress	4
AA 218	Graphic Design for the Web	4
AA 220	Digital Image Production	4
	AA or AR elective	3
CG 120	Computer Graphics: Art and Illustration I	4
CG 121	Computer Graphics: Art and Illustration II	4
CG 210	Computer Animation and Illustration	4
CG 222	Computer Graphics: 3-D Modeling	4
TR 101	Digital Video/Audio	4

Total credit hours (for each track) 19–24

*Students with no graphic design background should select AA 121 and AA 124 to complete their electives. Students with graphic design background should select CG 120, CG 121, CG 210, or any 200-level computer-based advertising art course not already taken.

Illustration (R) Advertising Art A.A.S.

This track prepares the student for employment as an illustrator. Subject interpretation, communication, and technical skills are stressed in the preparation of the student's portfolio.

First Semester

AA 121	Advertising Art Fundamentals	3
AR 101	Drawing I	3
AR 103	Design I	3
EN 101	Techniques of Reading and Writing	3
	<i>Behavioral and social sciences distribution</i>	3

Second Semester

AA 134	Illustration I	3
AR 102	Drawing II	3
CG 120	Computer Graphics: Art and Illustration I	4
	<i>English foundation</i>	3
	<i>Health foundation</i>	1

Third Semester

AA 135	Illustration II	3
AR 107	Art History I	3
AR 201	Painting I	3
CG 121	Computer Graphics: Art and Illustration II	4
	<i>Mathematics foundation</i>	3

Fourth Semester

AA 234	Illustration III	3
AR 108	Art History II	3
CG 210	Computer Animation and Illustration	4
SP 108	Fundamentals of Speech	3
	<i>Natural sciences lab distribution</i>	4

Total credit hours 62

AMERICAN SIGN LANGUAGE

American Sign Language A.A.S.

The American Sign Language (ASL) curriculum is designed to facilitate students in acquiring the language and culture of the Deaf in North America. This program encompasses much more than just recognizing signs with the eyes. It means acquiring the concepts presented through ASL and ASL interpreting to preserve the style and semantics of these concepts. Students will be taught to think critically about ASL, not merely to repeat someone else's signs. They will develop translating and interpreting skills to become literate and effective users of ASL. As students work through the curriculum,

American Sign Language A.A.S.
(continued)

they will be ready to do a variety of ASL teaching or interpreting that ranges from defining how a sign can be created to knowing how to express those signs coherently.

Upon completion of the curriculum, graduates will receive the A.A.S. and will be eligible to take the Registry of Interpreters for the Deaf (RID) examination for interpreting licensure or to be evaluated for the American Sign Language Teachers Association (ASLTA) Certificate.

First Semester

	<i>English foundation</i>	3
SL 100	Conversational ASL I	4
SL 101	Structural ASL I	3
SL 105	Visual Gestural Communication Foundations I	2
SL 106	Fingerspelling and Number Use in ASL I	1
	<i>Speech foundation</i>	3

Second Semester

	<i>Health foundation</i>	1
	<i>Mathematics foundation</i>	3
SL 102	Structural ASL II	3
SL 110	Conversational ASL II	3
SL 115	Visual Gestural Communication Foundations II	2
SL 116	Fingerspelling and Number Use in ASL II	1

Third Semester

SL 200	Conversational ASL III	3
SL 201	Structural ASL III	3
SL 226	Semantics and Communication in ASL I	1
SL 269	Independent Study in ASL	1–4
	<i>Behavioral or social sciences distribution</i>	3
	<i>Natural sciences lab distribution</i>	4

Fourth Semester

SL 202	Structural ASL IV	3
SL 207	ASL Translation and Interpretation for Literature	3
SL 210	Conversational ASL IV	3
SL 236	Semantics and Communication in ASL II	1
SL 285	Practicum in ASL	3–4
	<i>Arts or humanities distribution</i>	3

Total credit hours 60–64

American Sign Language Certificate

The American Sign Language (ASL) certificate curriculum is designed for students with a variety of goals:

- Students preparing to enter an Interpreter Training Program;
- Current interpreters needing to improve ASL skills, or maintain Interpreter Certification, through the Registry of Interpreters for the Deaf (RID) Certification Maintenance Program;
- Students preparing to teach ASL or to enter the field of Deaf education or Deaf-related research and discipline;
- Students whose first language is ASL who desire to learn the structure and syntax of their own language in order to develop a knowledge base to teach ASL, as well as to learn other languages;
- Students preparing for, or currently working in, careers requiring communication with Deaf consumers, business associates, colleagues, employees, supervisors, and students; and
- Students desiring to improve their understanding of Deaf culture to better communicate with Deaf family, friends, neighbors, and community.

Students who wish to pursue careers as interpreters for the Deaf are strongly encouraged to complete a two-year degree to acquire the depth and breadth of knowledge in ASL required to serve a diverse population in many settings.

SL 100	Conversational ASL I	4
SL 101	Structural ASL I	3
SL 102	Structural ASL II	3
SL 110	Conversational ASL II	3
SL 200	Conversational ASL III	3
SL 201	Structural ASL III	3
SL 202	Structural ASL IV	3
SL 210	Conversational ASL IV	3
	SL electives	6

Total credit hours 31

APPLIED GEOGRAPHY

Applied Geography A.A.S. (R)

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, and mapping exercises) 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 agriculture, climatology, marketing, transportation, planning, 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 solve locational problems.

First Semester

EN 101	Techniques of Reading and Writing	...3
GE 101	Introduction to Geography	...3
GE 151	Introduction to Cartography	...3
	<i>Mathematics foundation</i>	...3 (4)
	<i>Natural sciences lab distribution</i>	...4

Second Semester

	<i>English foundation</i>	...3
GE 102	Cultural Geography	...3
GE 104	Physical Geography	...4
GE 152	Interpretation of Geographic Imagery: Use and Analysis	...3
HE 100	<i>Principles of Healthier Living</i>	...1

Third Semester

CA 120	Introduction to Computer Applications	...3
GE 103	Economic Geography	...3
GE 110	Global Geography	...3
	Cartography, GIS, or geography elective*	...3
	<i>Speech foundation</i>	...3

Fourth Semester

	CS or MA elective	...3 (4)
GE 203	Geographic Education	
or		
GE 210	Preserving Our Natural Heritage	...3
	Cartography, GIS, or geography elective*	...3
	<i>Arts or humanities distribution</i>	...3
	<i>Behavioral and social sciences distribution</i>	...3

Total credit hours 60 (62)

*Select from GE 201, GE 202, GE 251, GE 252, and GE 261.

Cartography and Geographic Information Systems Certificate (R)

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 development. These skills are used by professionals employed in federal mapping and related agencies in the Washington metropolitan region.

GE 101	Introduction to Geography	...3
GE 151	Introduction to Cartography	...3
GE 152	Interpretation of Geographic Imagery: Use and Analysis	...3
GE 251	Principles of Map Design	...3
GE 252	Introduction to Computer Mapping	...3
GE 261	Introduction to Geographic Information Systems	...3
	Elective	...3 (4)

Total credit hours 21 (22)

Geographic Education Certificate (R)

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. Course work in this curriculum will involve fieldwork, use of computer technology, mapping exercises, and extensive reading.

GE 101	Introduction to Geography	.....3
GE 102	Cultural Geography	.....3
GE 104	Physical Geography	.....4
GE 110	Global Geography	.....3
GE 203	Geographic Education	.....3
GE 210	Preserving Our National Heritage: The Geography of Conservation and Natural Resources	.....3
	Cartography or geography elective*	...3
Total credit hours		22

*Select GE 103, GE 152, GE 201, or GE 202.

ARCHITECTURAL AND CONSTRUCTION TECHNOLOGY

There are two tracks leading to the A.A.S. 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 A.A.S. tracks are designed to prepare graduates for entry into paraprofessional positions in the construction industry and architecture upon completion of the curriculum.

Architectural Technology (R)

Architectural and Construction Technology A.A.S.

Graduates of this A.A.S. 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

CT 130	Construction Methods and Materials	...3
CT 170	Introduction to Architecture and the Built Environment	.....3
CT 181	Architectural Drafting Techniques	....3
	<i>English foundation</i>	.....3
	<i>Mathematics foundation</i>	.....3

Second Semester

CT 133	Construction Management	
or	Professional elective*	.....3
CT 142	Introduction to Architectural Graphics	.....3
CT 183	Computer Drafting: Architectural Applications	.....4
	<i>Speech foundation</i>	.....3
	<i>Behavioral and social sciences distribution</i>	.....3

Third Semester

AR 209	<i>History of Architecture I</i>	
or		
	<i>Arts or humanities distribution</i>	3
CT 201	Introduction to Architectural Design . .	4
CT 223	Computer Drafting: Architectural 3D Presentation	4
CT 284	Construction Estimating I	
or		
	Professional elective*	3
	<i>Health foundation</i>	1

Fourth Semester

AR 210	History of Architecture II	
or		
	Professional elective*	3
CT 224	Computer Drafting: Advanced Architectural Applications	4
CT 291	Building Codes and Inspection	
or		
	Professional elective*	3
CT 299	Professional Practicum	1
PH 203	<i>General Physics I</i>	
or		
	<i>Natural sciences lab distribution</i>	4

Total credit hours 61

*Professional electives: AR 101, AR 103, AR 209, AR 210, CA 120, CT 200 (3 sessions), CT 283, CT 288.

CAD for the Building Professional Certificate (R)

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 A.A.S. track.

CT 130	Construction Methods and Materials . . .	3
CT 181	Architectural Drafting Techniques	3
CT 183	Computer Drafting: Architectural Applications	4
CT 223	Computer Drafting: Architectural 3D Presentation	4
CT 224	Computer Drafting: Advanced Architectural Applications	4
	English foundation	3
	Mathematics foundation	3
	Total credit hours	24

Management of Construction (R)**Architectural and Construction Technology A.A.S.**

This A.A.S. 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.

First Semester

CT 130	Construction Methods and Materials . . .	3
CT 131	Construction Plan Reading	3
CT 133	Construction Management	3
CT 135	Construction Field Operations	3
EN 101	Techniques of Reading and Writing . . .	3
	<i>Arts or humanities distribution</i>	3

Management of Construction *(continued)*

Second Semester

CA 120	Introduction to Computer Applications	3
CT 132	Construction Contracts and Specifications	
or		
	Professional elective*	3
CT 250	Construction Project Safety and Health Administration	3
	<i>English foundation</i>	3
	<i>Health foundation</i>	1 (3)
	<i>Mathematics foundation</i>	3

Third Semester

CT 271	Surveying I	4
CT 283	Mechanical and Electrical Systems	3
CT 284	Construction Estimating I	3
CT 286	Construction Planning and Scheduling	3
	<i>Behavioral and social sciences distribution</i>	3

Fourth Semester

CT 285	Construction Estimating II	
or		
	Professional elective*	3
CT 288	Practical Construction Law	3
CT 291	Building Codes and Inspection	3
	<i>Speech foundation</i>	3
	<i>Natural sciences lab distribution</i>	4

Total credit hours 66 (68)

*Professional electives: BU electives, CE 260, CT 181, CT 183, CT 199-200, CT 299, MA 152, MA 180, MG 102.

Management of Construction Certificate (R)

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 A.A.S. track. The student may transfer to the A.A.S. track.

CT 130	Construction Methods and Materials	3
CT 131	Construction Plan Reading	3
CT 133	Construction Management	3
CT 135	Construction Field Operations	3
CT 284	Construction Estimating I	3
CT 286	Construction Planning and Scheduling	3
CT 288	Practical Construction Law	3
CT 291	Building Codes and Inspection	3
EN 101	Techniques of Reading and Writing	3
	Professional electives*	6 (8)

Total credit hours 33 (35)

*Professional electives: BU electives, CA 120, CE 260, CT 132, CT 181, CT 183, CT 199-200, CT 250, CT 271, CT 283, CT 285, CT 299, MA 100, MA 180, MG 102.

ART

The art curricula include four tracks leading to the A.A. in arts and sciences (art, art education, art history, and studio art) and two certificate curricula (specialized art and studio art).

Art (G, TP)

Arts and Sciences A.A.

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 A.A. 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.

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

First Semester

AR 101	<i>Drawing I</i>	3
AR 103	<i>Design I</i>	3
AR 107	<i>Art History I</i>	3
EN 101	<i>Techniques of Reading and Writing</i>	3
	<i>Health foundation</i>	1
	<i>Behavioral and social sciences distribution*</i>	3

Second Semester

AR 102	<i>Drawing II</i>	3
AR 104	<i>Design II</i>	3
AR 108	<i>Art History II</i>	3
EN 102	<i>Techniques of Reading and Writing</i>	3
	<i>Mathematics foundation</i>	3
PE 101–199	<i>Physical education elective</i>	1

Third Semester

	AR electives (2) [†]	6
EN 201		
or		
EN 202	<i>Introduction to World Literature</i>	3
	<i>Humanities distribution</i>	3
	<i>Natural sciences lab distribution</i>	4

Fourth Semester

	AR electives (2) [†]	6
	<i>Speech foundation</i>	3
	<i>Arts or humanities distribution[‡]</i>	3
	<i>Behavioral and social sciences distribution*</i>	3
	<i>Natural sciences non-lab or lab distribution</i>	3 (4)

Total credit hours 66 (67)

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

[†]Students wishing to pursue an emphasis in studio art, art education, or art history should consult a member of the art faculty for advice on selection of appropriate electives.

[‡]200-level literature course recommended.

Art Education (R)*Arts and Sciences A.A.*

This track is designed for the student who is interested in teaching art and who plans to transfer to a four-year program to pursue a career in elementary or secondary art education. Completion of all requirements for this track will lead to the award of the A.A. in arts and sciences.

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

First Semester

AR 101	<i>Drawing I</i>	3
AR 103	<i>Design I</i>	3
AR 107	<i>Art History I</i>	3
EN 101	<i>Techniques of Reading and Writing</i>	3
	<i>Health foundation</i>	1
	<i>Mathematics foundation</i>	3

Second Semester

AA 124	<i>Advertising Design I</i>	3
AR 102	<i>Drawing II</i>	3
AR 104	<i>Design II</i>	3
AR 105	<i>Color</i>	3
AR 108	<i>Art History II</i>	3
EN 102	<i>Techniques of Reading and Writing</i>	3

Third Semester

AR 121	<i>Ceramics I</i>	3
AR 123	<i>Crafts</i>	3
PY 102	<i>General Psychology</i>	3
	<i>Speech foundation</i>	3
	<i>Natural sciences non-lab or lab distribution</i>	3
	<i>Printmaking elective*</i>	3

Fourth Semester

AR 201	<i>Painting I</i>	3
AR 221	<i>Sculpture I</i>	3
PE 101–199	<i>Physical education elective</i>	1
	<i>Behavioral and social sciences distribution[†]</i>	3
	<i>Humanities distribution[‡]</i>	3
	<i>Natural sciences lab distribution</i>	4

Total credit hours 69

*Select AR 213, AR 214, AR 223, AR 224, or AR 226.

[†]Cannot be a psychology course.

[‡]Students planning to transfer to institutions requiring a foreign language are advised to elect a foreign language.

Art History (R)*Arts and Sciences A.A.*

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.

Art History (continued)

Completion of all requirements for this track will lead to the award of the A.A. in arts and sciences.

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

First Semester

AR 101	<i>Drawing I</i>	3
AR 103	<i>Design I</i>	3
AR 107	Art History I	3
EN 101	Techniques of Reading and Writing	3
	<i>Speech foundation</i>	3
	Foreign language elective*	3

Second Semester

AR 102	Drawing II	3
AR 104	Design II	3
AR 108	Art History II	3
EN 102	<i>Techniques of Reading and Writing</i>	3
	<i>Health foundation</i>	1
PE 101–199	Physical education elective	1
	Foreign language elective*	3

Third Semester

	<i>Mathematics foundation</i>	3
	<i>Behavioral and social sciences distribution</i> [†]	3
	<i>Natural sciences non-lab or lab distribution</i>	3 (4)
	Art history elective	3
	Foreign language elective*	3

Fourth Semester

	<i>Behavioral and social sciences distribution</i> [†]	3
	<i>Natural sciences lab distribution</i>	4
	Art history elective	3
	Foreign language elective*	3
	<i>Literature elective</i> [‡]	3

Total credit hours 66 (67)

*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.

Studio Art (R)

Arts and Sciences A.A.

This track is designed for the student who is interested in making art and in exploring the

aesthetics and techniques of various studio areas, such as ceramics, crafts, design, drawing, painting, printmaking, and sculpture. This track introduces the student to a broad range of basic art courses, which may lead to future specialization and/or transfer to a four-year program. Completion of all requirements for this track will lead to the award of the A.A. in arts and sciences.

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

First Semester

AR 101	<i>Drawing I</i>	3
AR 103	<i>Design I</i>	3
AR 107	Art History I	3
EN 101	Techniques of Reading and Writing	3
	<i>Health foundation</i>	1
	<i>Mathematics foundation</i>	3

Second Semester

AR 102	Drawing II	3
AR 104	Design II	3
AR 105	Color	3
AR 108	Art History II	3
EN 102	<i>Techniques of Reading and Writing</i>	3
	<i>Behavioral and social sciences distribution</i> *	3

Third Semester

	AA, AR, or ID elective [†]	3
	Crafts elective [‡]	3
	Printmaking elective**	3
	<i>Behavioral and social sciences distribution</i> *	3
	<i>Humanities distribution</i>	3
	<i>Natural sciences non-lab or lab distribution</i>	3 (4)

Fourth Semester

AR 201	Painting I	3
AR 221	Sculpture I	3
	AA, AR, or ID elective	3
PE 101–199	Physical education elective	1
	<i>Speech foundation</i>	3
	<i>Natural sciences lab distribution</i>	4

Total credit hours 69 (70)

*Must be taken from different disciplines. One multicultural course is required from art, humanities, or behavioral and social studies distribution.

[†]CG 120 or PG 150 is recommended.

[‡]Select AR 121, AR 123, AR 124, or AR 229.

**Select AR 213, AR 214, AR 223, AR 224, or AR 226.

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

Specialized Art Certificate

This certificate curriculum is designed for students who want intensive training in drawing, painting, printmaking, ceramics, sculpture, or jewelry and metalsmithing. Students who complete this curriculum may continue study toward an associate's degree. Students should select one art history course and one specialized art area in consultation with an adviser in the Art Department.

Art History Requirement (3 credit hours)

Select AR 107 Art History I, AR 108 Art History II, or AR 127 Art Appreciation (Art in Culture).

Drawing (select 12 credit hours)

AR 101	Drawing I	.....3
AR 102	Drawing II	.....3
AR 280A	Studio Practicum	.....3
AR 281A	Studio Practicum	.....3
AR 285A	Individualized Art Workshop	.....3

Painting (select 12 credit hours)

AR 201	Painting I*	.....3
AR 202	Painting II	.....3
AR 205	Watercolor I*	.....3
AR 206	Watercolor II	.....3
AR 280B	Studio Practicum	.....3
AR 281B	Studio Practicum	.....3
AR 285B	Individualized Art Workshop	.....3

Printmaking (select 12 credit hours)

Select two courses from the following: .....6		
AR 213	World Woodcut and Relief Traditions†	
AR 214	Printmaking: Lithography†	
AR 223	Lithography and Relief Printmaking†	
AR 224	Intaglio Printmaking	
Select two courses from the following: .....6		
AR 225	Seriography	
AR 226	Monotype Workshop	
AR 280C	Studio Practicum	
AR 281C	Studio Practicum	
AR 285C	Individualized Art Workshop	

Ceramics (select 12 credit hours)

AR 121	Ceramics I	.....3
AR 122	Ceramics II	.....3
AR 280D	Studio Practicum	.....3
AR 281D	Studio Practicum	.....3
AR 285D	Individualized Art Workshop	.....3

Sculpture (select 12 credit hours)

AR 221	Sculpture I*	.....3
AR 222	Sculpture II	.....3
AR 280E	Studio Practicum	.....3
AR 281E	Studio Practicum	.....3
AR 285E	Individualized Art Workshop	.....3

Jewelry and Metalsmithing (select 12 credit hours)

Select two courses from the following: .....6		
AR 123	Crafts	
AR 124	Enameling I	
AR 125	Enameling II	
AR 229	Jewelry and Metalsmithing	
Select two courses from the following: .....6		
AR 280G	Studio Practicum	
AR 281G	Studio Practicum	
AR 285G	Individualized Art Workshop	

Total credit hours (for each area) 15

*Students must either complete the prerequisites (AR 102 and AR 103 for AR 201; AR 101 for AR 205; AR 103 and AR 104 for AR 221) or have them waived by consent of the department.

†Students may not receive credit for both AR 223 and AR 213 or AR 214.

Studio Art Certificate

This certificate curriculum is designed to provide a strong foundation in art while offering an opportunity for generalized study. Students who complete this curriculum may continue study toward an associate's degree. Student should select courses in consultation with an adviser in the Art Department.

General Art Requirements (18 credit hours)

AR 101	Drawing I	.....3
AR 102	Drawing II	.....3
AR 103	Design I	.....3
AR 104	Design II	.....3
AR 105	Color	.....3
Select one of the following: .....3		
AR 107	Art History I	
AR 108	Art History II	
AR 127	Art Appreciation (Art in Culture)	

Studio Art Electives (12 credit hours)

Select from the following courses: AR 112, AR 113, AR 121, AR 122, AR 123, AR 124, AR 125, AR 201, AR 202, AR 203, AR 204, AR 205, AR 206, AR 213, AR 214, AR 221, AR 222, AR 223*, AR 224, AR 225, AR 226, AR 227, AR 229, AR 280A–AR 280G, AR 281A–AR 281G, AR 285A–AR 285L.

Total credit hours 30

*Students cannot also receive credit for AR 213 or AR 214.

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

AUTOMOTIVE TECHNOLOGY

Automotive Technology A.A.S. (R)

The purpose of this curriculum is to provide students with entry-level diagnostic and manipulative skills to enable them to successfully diagnose, adjust, and/or repair today's highly sophisticated automobiles. With the advent of automotive electronics, microcomputer controls, and emission regulations, there is an ever-increasing need for technicians with logical thinking patterns, good communication skills, and mechanical expertise.

Students completing this curriculum will have been exposed to the areas necessary to provide competencies in basic mechanics; automotive sciences including physical, electrical, and chemical principles; and automotive diagnostics and repair for all certifiable areas. Students may select electives to enhance specialized competencies or interests.

Career opportunities include dealership service personnel, writers, technicians, diagnosticians, and advisers; manufacturers' representatives for service or parts; and self-employment.

Completion of all requirements for this curriculum will lead to the award of the A.A.S. in automotive technology.

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

First Semester

AT 101	Introduction to Automotive Technology	3
AT 105	Automotive Science	3
AT 115	Automotive Electricity I	4
<i>CH 109A/B</i>	<i>Chemistry and Society/ Chemistry and Society Laboratory*</i>	
<i>or</i>	<i>Natural sciences lab distribution</i>	<i>4</i>
EN 101	Techniques of Reading and Writing ...	3

Second Semester

AT 107	Internal Combustion Engines	4
AT 116	Automotive Electricity II	4
	<i>English foundation</i>	<i>3</i>
	<i>Mathematics foundation</i>	<i>3</i>
	<i>Behavioral and social sciences distribution</i>	<i>3</i>

Third Semester

AT 221	Automotive Fuel Systems I	4
	AT electives (2) [†]	8
	<i>Health foundation</i>	<i>1</i>
SP 108	Fundamentals of Speech	
<i>or</i>	<i>Speech foundation</i>	<i>3</i>

Fourth Semester

AT 222	Automotive Fuel Systems II	4
AT 251	Automotive Technology Practicum [‡]	1 (4)
	AT electives (2) [†]	8
	<i>Arts or humanities distribution</i>	<i>3</i>

Total credit hours 66 (69)

**If the student chooses this chemistry course instead of another natural sciences distribution course, both CH 109A and CH 109B must be taken.*

[†]Select from AT 109, AT 110, AT 225, AT 227, AT 229, and AT 231.

[‡]AT 251 may be taken any time after AT 101 and AT 115. Students should consider taking AT 251 during the summer.

Automotive Air Conditioning Specialist Certificate (R)

This certificate curriculum is intended to prepare people for immediate employment in the automotive air conditioning service field. The occupational objectives include diagnosis, inspection, service, repair, and installation of vehicle climate control systems. This curriculum prepares technicians for A.S.E. Certification Test A7, Heating and Air Conditioning. The student who completes the curriculum may continue study toward the associate's degree in automotive technology.

AT 101	Introduction to Automotive Technology	3
AT 105	Automotive Science	3
AT 115	Automotive Electricity I	4
AT 229	Automotive Air Conditioning	4
	AT elective	4
EN 101	Techniques of Reading and Writing ...	3
	MA elective	3

Total credit hours 24

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

Automotive Drive Train Specialist Certificate (R)

This certificate curriculum is intended to prepare people for immediate employment in the automotive service field as engine, transmission, and transaxle technicians. The occupational objectives include diagnosis, inspection, service, and repair of modern passenger vehicle and light truck drive lines. This curriculum prepares technicians for the following A.S.E. Certification Tests: A1, Engine Repair; A2, Automatic Transmission/Transaxle; and A3, Manual Drive Train and Axles. The student who completes the curriculum may continue study toward the associate's degree in automotive technology.

AT	101	Introduction to Automotive Technology	3
AT	105	Automotive Science	3
AT	107	Internal Combustion Engines	4
AT	115	Automotive Electricity I	4
AT	225	Automotive Power Train	4
AT	227	Automotive Transmissions and Transaxles	4
		AT elective	4
EN	101	Techniques of Reading and Writing ...	3
		MA elective	3
Total credit hours			32

Automotive Driveability Specialist Certificate (R)

This certificate curriculum is intended to prepare people for immediate employment in the automotive service field as vehicle driveability and tune-up specialists. The occupational objectives include diagnosis, inspection, service, and repair of modern fuel, ignition, emission, and electrical systems. This curriculum prepares technicians for the following A.S.E. Certification Tests: A1, Engine Repair; A6, Electrical Systems; and A8, Engine Performance. The student who completes the curriculum may continue study toward the associate's degree in automotive technology.

AT	101	Introduction to Automotive Technology	3
AT	107	Internal Combustion Engines	4
AT	115	Automotive Electricity I	4
AT	116	Automotive Electricity II	4
AT	221	Automotive Fuel Systems I	4
AT	222	Automotive Fuel Systems II	4
AT	231	Engine Diagnosis and Tune-up	4
EN	101	Techniques of Reading and Writing ...	3
		MA elective	3

Total credit hours 33

Automotive Electrical Systems Specialist Certificate (R)

This certificate curriculum is intended to prepare people for immediate employment as automotive electrical systems and component technicians. This curriculum prepares technicians for the A.S.E. Certification Test A6, Electrical Systems. The student who completes the curriculum may continue study toward the associate's degree in automotive technology.

AT	101	Introduction to Automotive Technology	3
AT	105	Automotive Science	3
AT	115	Automotive Electricity I	4
AT	116	Automotive Electricity II	4
		AT elective	4
EN	101	Techniques of Reading and Writing ...	3
		MA elective	3

Total credit hours 24

Automotive Suspension, Brake, and Alignment Specialist Certificate (R)

This certificate curriculum is intended to prepare people for immediate employment in the automotive service field as suspension, brake, and alignment technicians. The occupational objectives include diagnosis, inspection, service, and repair of modern suspension and brake systems, including all wheel alignments. This curriculum prepares technicians for the following A.S.E. Certification Tests: A4, Suspension and Steering; and A5, Brakes. The student who completes the curriculum may continue study toward the associate's degree in automotive technology.

Automotive Suspension, Brake, and Alignment Specialist Certificate *(continued)*

AT 101	Introduction to Automotive Technology	3
AT 105	Automotive Science	3
AT 109	Automotive Suspension and Brakes ..	4
AT 110	Automotive Steering and Alignment ..	4
	AT elective	4
EN 101	Techniques of Reading and Writing ..	3
	MA elective	3
Total credit hours		24

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 a certificate to meet students' differing needs.

Biotechnology A.A.S. (G) *Statewide Program*

On completion of the biotechnology A.A.S., the student may transfer to another institution and earn a B.S. or M.S. 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 course work in biotechnology, biology, chemistry, and mathematics. These background courses prepare students for more rigorous upper-level applied course work in biotechnology, biology, and chemistry taken during the second year. On completion of three or more biotechnology classes with a GPA of 2.5

or better and with consent of the biotechnology coordinator, the student has the option of applying to enroll in the biotechnology practicums for off-campus training at local partner biotechnology companies. This option must be selected within six months of completing the on-campus courses. These practicums often result in full-time employment opportunities. High school biology, chemistry, and math (algebra II) are strongly recommended.

General Education and Other Requirements (23 credit hours)

BI 107	<i>Principles of Biology I</i>	4
EN 101	Techniques of Reading and Writing ..	3
	<i>English foundation</i>	3
	<i>Health foundation</i>	1
	<i>Mathematics foundation</i>	3
	<i>Speech foundation</i>	3
	<i>Arts or humanities distribution</i>	3
	<i>Behavioral and social sciences distribution</i> ..	3

Biotechnology Core Requirements (33–34 credit hours)

BI 203	Microbiology	4
BI 209	General Genetics	4
BT 101	Introduction to Biotechnology	2
BT 117	Cell Culture and Cell Function	3
BT 200	Protein Biotechnology	4
BT 204	Basic Immunology and Immunological Methods	4
BT 213	Nucleic Acid Methods	4
CH 101	Principles of Chemistry I	4
CH 120	Essentials of Organic and Biochemistry	
	or	
CH 203	Organic Chemistry I	4(5)

Electives (select a minimum of 5 credit hours)

BT 115	Instrumentation for the Biotechnology Laboratory	3
BT 221	Biotechnology Practicum	1-3
CA 120	Introduction to Computer Applications ..	3
CH 102	Principles of Chemistry II	4
CH 204	Organic Chemistry II	5
	MA elective	3

Total credit hours 61(62)

Biotechnology Certificate (G)

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).

BT 101	Introduction to Biotechnology	.....2
BT 115	Instrumentation for the Biotechnology Laboratory	.....3
BT 117	Cell Culture and Cell Function	.....3
BT 200	Protein Biotechnology	.....4
BT 204	Basic Immunology and Immunological Methods	.....4
BT 213	Nucleic Acid Methods	.....4

Total credit hours 20

BUILDING TRADES TECHNOLOGY

Building Trades Technology A.A.S. (R)

This program provides the student with a comprehensive mixture of academic and practical training in the areas involved in residential building trades technology. The student elects a major in carpentry; electrical; heating, ventilation, and air conditioning/refrigeration (HVAC/R); or plumbing. The practical, laboratory-intensive building trades technology courses are complemented with additional specialized course work and a broad general education component. Students may select electives to enhance specialized competencies, interests, or career paths. Completion of all requirements will lead to the A.A.S. in building trades technology.

Career paths include carpenter, plumber, electrician, HVAC technician, skilled trades supervisor, codes official, material distributor, property management technician, builder, and remodeler.

This program is approved by the Suburban Maryland Building Industry Association and was developed with their assistance.

General Education and Other Requirements (23 credit hours)

EN 101	Techniques of Reading and Writing	....3
	<i>English foundation</i>	.....3
HE 100	<i>Principles of Healthier Living</i>	.....3
or		
	<i>Health foundation</i>	.....1
	<i>Mathematics foundation</i>	.....3
	<i>Speech foundation</i>	.....3
	<i>Arts or humanities distribution</i>	.....3
	<i>Behavioral and social sciences distribution</i>	.....3
	<i>Natural sciences lab distribution</i>	.....4

Building Trades Fundamental Requirements (23 credit hours)

BU 130	Introduction to the Building Trades	....3
BU 140	Carpentry I	.....4
	or one of the following:	
BU 144	Electricity I	
BU 146	Plumbing I	
BU 148	Heating, Ventilation, and Air Conditioning/Refrigeration I	
BU 240	Carpentry II	.....4
	or one of the following:	
BU 244	Electricity II	
BU 246	Plumbing II	
BU 248	Heating, Ventilation, and Air Conditioning/Refrigeration II	
BU 250	Safety for the Building Trades	.....3
CT 130	Construction Methods and Materials	...3
CT 131	Construction Plan Reading	.....3
CT 135	Construction Field Operations	.....3

Professional Electives (15–17 credit hours)

Select from BU 140, BU 144, BU 146, BU 148, BU 240, BU 244, BU 246, BU 248, BU 260, CE 261, CT 133, CT 284, and CT 299.

Total credit hours 61–63

Building Trades Technology— Certificate (R)

This certificate curriculum is designed to prepare students for entry-level positions in the field of residential building trades technology.

The student elects a major in carpentry; electrical; heating, ventilation, and air conditioning/refrigeration; or plumbing. The practical, laboratory-intensive building trades technology courses are complemented with additional specialized course work. Students select elective credit to enhance specialization, interest, or career paths.

The student who completes the certificate may continue study toward the associate’s degree in building trades technology.

BU 130	Introduction to the Building Trades	3
BU 140	Carpentry I	4
	or one of the following:	
BU 144	Electricity I	
BU 146	Plumbing I	
BU 148	Heating, Ventilation, and Air Conditioning/Refrigeration I	
BU 240	Carpentry II	4
	or one of the following:	
BU 244	Electricity II	
BU 246	Plumbing II	
BU 248	Heating, Ventilation, and Air Conditioning/Refrigeration II	
	Professional electives*	6
	Total credit hours	17

**Professional electives: BU 250, CE 260, CT 131, CT 135.*

Building Trades Technology— Carpentry Letter of Recognition (R)

This sequence of two courses is designed for persons who wish to develop skills in building trades technology, specifically in the carpentry field. To complete each course in this sequence, students need to demonstrate skills in specific areas. A grade of C or better is required in each course.

BU 140	Carpentry I	4
BU 240	Carpentry II	4
	Total credit hours	8

Building Trades Technology— Electricity Letter of Recognition (R)

This sequence of two courses is designed for persons who wish to develop skills in building trades technology, specifically in the electrical field. To complete each course in this sequence, students need to demonstrate skills in specific areas. A grade of C or better is required in each course.

BU 144	Electricity I	4
BU 244	Electricity II	4
	Total credit hours	8

Building Trades Technology— HVAC/R Letter of Recognition (R)

This sequence of two courses is designed for persons who wish to develop skills in building trades technology, specifically in the heating, ventilation, and air conditioning/refrigeration (HVAC/R) field. To complete each course in this sequence, students need to demonstrate skills in specific areas. A grade of C or better is required in each course.

BU 148	Heating, Ventilation, and Air Conditioning/Refrigeration I	4
BU 248	Heating, Ventilation, and Air Conditioning/Refrigeration II	4
	Total credit hours	8

Building Trades Technology— Plumbing Letter of Recognition (R)

This sequence of two courses is designed for persons who wish to develop skills in building trades technology, specifically in the plumbing field. To complete each course in this sequence, students need to demonstrate skills in specific areas. A grade of C or better is required in each course.

BU 146	Plumbing I	4
BU 246	Plumbing II	4
	Total credit hours	8

BUSINESS A.A.

This transfer curriculum is designed for students planning to attend a school of business at a four-year college. It provides a solid foundation for students majoring in such areas as finance, accounting, economics, marketing, management, or pre-law. Completion of all requirements for this curriculum will lead to the award of the A.A. in business.

Sophomore-level business students with a minimum 3.2 grade point average are eligible for an honors program that includes a seminar, mentoring, and an internship. For more information on this program, which is offered by the Macklin Business Institute, see page 54 of this catalog.

First Semester

BA 101	Introduction to Business	3
	<i>CA or CS elective*</i>	3
	<i>Mathematics foundation*</i>	3 (4)
	<i>Behavioral and social sciences distribution†</i>	3
	Elective‡	3

Second Semester

EC 103	The Evolution of Economic Societies	
or		
	<i>Humanities distribution</i>	3
	<i>English foundation*</i>	3
	<i>Speech foundation</i>	3
	<i>Arts distribution</i>	3
	<i>Natural sciences non-lab or lab distribution</i>	3 (4)

Third Semester

AC 201	Principles of Accounting I	4
EC 201	Principles of Economics I	3
	<i>Health foundation</i>	1-3
	<i>Arts or humanities distribution</i>	3
	<i>Natural sciences lab distribution</i>	4

Fourth Semester

AC 202	Principles of Accounting II	4
BA 210	Statistics for Business Administration	
or		
MA 116	Elements of Statistics*	3
EC 202	Principles of Economics II	3
MG 201	Business Law I*	3
	Elective**	1-2

Total credit hours 60

*Students should consult an adviser regarding requirements at transfer institutions.

†Select a course with any designator other than EC.

‡EN 101 will satisfy this elective.

**Use as needed to fulfill the 60-credit requirement.

International Business Business A.A.

Students intending to transfer who wish to have an emphasis in international business, which combines foreign studies with business, should follow the business A.A. curriculum but take two semesters of a single foreign language (as humanities distribution electives) and consider either PS 160 or PS 203 as a behavioral and social sciences elective. Students should consult an adviser regarding requirements at transfer institutions.

COMMUNICATION AND 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 A.A.S. in communication and broadcasting technology. Students in either the radio or the television A.A.S. track study broad industry-wide topics, including an introduction to broadcasting,

Communication and Broadcasting Technology *(continued)*

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 A.A.S. 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.

Broadcast Journalism Certificate (R)

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.

EN 101	Techniques of Reading and Writing	3
TR 101	Digital Video/Audio	4
TR 129	Introduction to Broadcasting	3
TR 130	Television Production	4
TR 131	Audio Production Techniques	4
TR 139	Writing for Television and Radio	3
TR 237	Broadcast Journalism	3
TR 240	Advanced Television Production	4
TR 255	Advanced Broadcast Journalism	3
TR 258	Electronic Field Production	3

Total credit hours 34

Digital Multimedia Production Certificate (R)

This certificate curriculum provides an intensive course of study that is focused on providing proficiency in creating original digital video, digital animation, and digital audio source materials and manipulating both original and existing source materials into digital multimedia programs, presentations, or adapted to making films suitable for educational, commercial, and corporate use. This certificate curriculum is intended to assist those persons seeking first-time employment, those planning to change careers, and those currently working who wish to upgrade or expand their skills. It is intended for individuals who plan to work as employees or as self-employed entrepreneurs.

TR 101	Digital Video/Audio	4
TR 145	Digital Audio for Multimedia	4
TR 155	Digital Videography	
or		
CG 210	Computer Animation and Illustration . . .	4
TR 295	Advanced Digital Multimedia Production	4

Total credit hours 16

Radio (R)

Communication and Broadcasting Technology A.A.S.

This A.A.S. track is designed primarily to educate the student interested in seeking a career in radio broadcasting. Emphasis is placed on the study of skills associated with performance, production, technical operation, and management in the field of radio communications.

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

First Semester

EN 101	Techniques of Reading and Writing	3
MU 110	Listening to Music	3
	<i>Speech foundation</i>	3
TR 129	Introduction to Broadcasting	3
TR 131	Audio Production Techniques	4

Second Semester

	<i>English foundation</i>	3
SP 109	Voice and Diction	3
TR 139	Writing for Television and Radio	3
TR 215	Computers in Radio	3
TR 233	Radio Production	4

Third Semester

TR 104	<i>Media Appreciation</i>	3
TR 237	Broadcast Journalism	3
TR 256	Radio Station Operation	3
	<i>Behavioral and social sciences distribution</i>	3
	<i>Natural sciences lab distribution</i>	4

Fourth Semester

	<i>Health foundation</i>	1 (3)
	<i>Mathematics foundation</i>	3
MU 133	History of Jazz	3
TR 249	Broadcast Management and Engineering	3
TR 255	Advanced Broadcast Journalism	3

Total credit hours 61 (63)

Radio Production Certificate (R)

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.

EN 101	Techniques of Reading and Writing	3
TR 129	Introduction to Broadcasting	3
TR 131	Audio Production Techniques	4
TR 215	Computers in Radio	3
TR 233	Radio Production	4
TR 249	Broadcasting Management and Engineering	3
TR 256	Radio Station Operation	3

Total credit hours 23

Television (R)**Communication and Broadcasting
Technology A.A.S.**

This A.A.S. 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.

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

First Semester

EN 101	Techniques of Reading and Writing	3
TR 101	Digital Video/Audio	4
TR 130	Television Production	4
TR 131	Audio Production Techniques	4

Second Semester

	<i>English foundation</i>	3
TR 129	Introduction to Broadcasting	3
TR 139	Writing for Television and Radio	3
TR 240	Advanced Television Production	4
TR 258	Electronic Field Production	3

Third Semester

	<i>Health foundation</i>	1 (3)
	<i>Mathematics foundation</i>	3
	<i>Speech foundation</i>	3
TR 104	<i>Media Appreciation</i>	3
TR 237	Broadcast Journalism	3
TR 238	Television Directing	3

Fourth Semester

TR 249	Broadcast Management and Engineering	3
TR 255	Advanced Broadcast Journalism	3
	<i>Behavioral and social sciences distribution</i>	3
	<i>Natural sciences lab distribution</i>	4

Total credit hours 60 (62)

Television Production Certificate (R)

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.

EN 101	Techniques of Reading and Writing	3
TR 101	Digital Video/Audio	4
TR 129	Introduction to Broadcasting	3
TR 130	Television Production	4
TR 131	Audio Production Techniques	4
TR 238	Television Directing	3
TR 240	Advanced Television Production	4
TR 258	Electronic Field Production	3

Total credit hours 28

COMPUTER APPLICATIONS

See also *Web Careers*

Computer Applications A.A.S.

The computer applications program is for students who want to use the computer as a tool of productivity. There are three tracks in this program: administrative support technology, help desk technology, and information technology. The General Education courses in conjunction with specialized courses for each track provide a broad foundation and sharpen the student's skills in preparation for entry or advancement in today's workplace.

The *administrative support technology track* provides students with the skills necessary to attain an administrative assistant or office support staff position. Emphasis is on building skills in computer applications software and office production duties. Interpersonal skills, business ethics, and communications are also an integral aspect of this track.

The *help desk technology track* provides students with essential background to serve as help desk support staffers for computer appli-

cations. Emphasis is on hardware and software troubleshooting, user training, production of documentation, and help desk operation. This track includes advanced customer relations skills as they apply in a help desk environment. Upon completion of the certificate, students will be able to apply for positions as entry-level dispatchers.

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, or any area that requires the use of computer applications as a necessary tool of production. Emphasis is 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 the student with in-depth knowledge in more than one application area and has the potential to lead to Microsoft certification in those areas. Evaluation and selection of computer hardware and software packages are discussed.

The computer applications program participates in an interdisciplinary Web careers program, which includes an A.A.S. and three certificate curricula. For more information on the Web careers program, see pages 144–146.

General Education and Other Requirements (23 credit hours)

EN 101	Techniques of Reading and Writing	3
	<i>English foundation</i>	<i>3</i>
	<i>Health foundation</i>	<i>1</i>
	<i>Mathematics foundation</i>	<i>3</i>
	<i>Speech foundation</i>	<i>3</i>
	<i>Arts or humanities distribution</i>	<i>3</i>
	<i>Behavioral and social sciences</i>	
	<i>distribution</i>	<i>3</i>
	<i>Natural sciences lab distribution</i>	<i>4</i>

Administrative Support Technology Track (39 credit hours)

CA 101	Computer Keyboarding	3
CA 103	Office Communications Skills for Information Processing	3
CA 104	Professional Business Procedures	3
CA 106	Using Microcomputer Operating Systems	3
CA 131	Introduction to Word Processing Applications	3
CA 141	Introduction to Database Applications	
or		
CA 172	Internet and Web Literacy	3
CA 151	Introduction to Spreadsheet Applications	3
CA 160	Computer Presentations	3
CA 232	Advanced Word Processing Applications	3
Electives: Select from AC 201, AC 202, CA 100, CA 102, CA 120, CA 141, CA 161, CA 172, CA 240, CA 242, CA 252, CA 261, CA 270, CA 271, CG 120, CS 110, and MG 101		
Total credit hours for administrative support technology track		62

Help Desk Track (39 credit hours)

CA 100	Keyboarding Fundamentals*	1
CA 104	Professional Business Procedures	3
CA 106	Using Microcomputer Operating Systems	3
CA 270	Microcomputer Systems Evaluations	3
CA 271	Computer Networking	3
CA 280	Customer Service Skills and the Help Desk Professional	3
CS 110	Computer Concepts	3
Electives (18 credits): At least 12 credits must be selected from CA 131, CA 141, CA 151, CA 160, CA 172, CA 232, CA 242, CA 252, CA 269, and CA 272. The remaining 6 credits must be in CA or related areas (AC, BA, CG, CS, MG, NW).		
Total credit hours for help desk track		60

*Any one or more credits may be used to fulfill the 60-credit requirement in place of CA 100 if a student demonstrates ability to type at least 25 wam.

Information Technology Track (39 credit hours)

CA 106	Using Microcomputer Operating Systems	3
CA 131	Introduction to Word Processing Applications	3
CA 141	Introduction to Database Applications	3
CA 151	Introduction to Spreadsheet Applications	3
CA 270	Microcomputer Systems Evaluation	3
CS 110	Computer Concepts	3
Select two of the following:		
CA 232 Advanced Word Processing Applications, CA 240 Advanced Database Applications, CA 252 Advanced Spreadsheet Applications		6
Electives: At least 9 credits must be in CA or related areas (AA, AC, BA, CG, CS, MG, NW, PR)		
Total credit hours for information technology track		62

Administrative Support Technology Certificate (R)

This certificate curriculum is intended to provide students with the skills necessary to obtain employment as an administrative assistant, administrative secretary, executive secretary, secretary, secretary/receptionist, word processing specialist, or a similar position. The curriculum builds skills in keyboarding, computer applications, effective oral and written communications, planning, organizing, and decision making. In addition, attitudes and interpersonal skills acceptable in business and knowledge of the functions and procedures involved in office operations are stressed. The development of vital technical skills and administrative abilities will prepare students for entry-level positions as well as enable them to secure advanced positions.

Administrative Support Technology Certificate *(continued)*

CA 101	Computer Keyboarding	3
CA 103	Office Communications Skills for Information Processing	3
CA 104	Professional Business Procedures	3
CA 106	Using Microcomputer Operating Systems	3
CA 131	Introduction to Word Processing Applications	3
CA 151	Introduction to Spreadsheet Applications	3
CA 160	Computer Presentations	3
CA 232	Advanced Word Processing Applications	3
EN 101	Techniques of Reading and Writing	3
	Elective: Select CA 120, CA 141, CA 161, or CA 172	3
Total credit hours		30

Help Desk Certificate

This certificate curriculum provides students with essential background to serve as help desk support staffers for computer applications. Upon completion of the curriculum, students will be able to apply for positions as entry-level dispatchers or Tier-1 analysts.

CA 100	Keyboarding Fundamentals*	1
CA 104	Professional Business Procedures	3
CA 106	Introduction to Microcomputer Operating Systems	3
CA 270	Microcomputer Systems Evaluations	3
CA 271	Computer Networking	3
CA 280	Customer Service Skills and the Help Desk Professional	3
CS 110	Computer Concepts	3
EN 109	Writing for Technology and Business	3
	Electives: Select three of the following courses: CA 131, CA 141, CA 151, CA 160, CA 172, CA 232, CA 240, CA 242, CA 252, CA 269, and CA 272	9
Total credit hours		30 (31)

**The student may demonstrate ability to type at least 30 wpm rather than completing CA 100.*

Information Technology Certificate

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.

CA 106	Using Microcomputer Operating Systems	3
CA 131	Introduction to Word Processing Applications	3
CA 141	Introduction to Database Applications	3
CA 151	Introduction to Spreadsheet Applications	3
CA 270	Microcomputer Systems Evaluation	3
CS 110	Computer Concepts	3
	Select two of the following courses: CA 232 Advanced Word Processing Applications, CA 240 Advanced Database Applications, CA 252 Advanced Spreadsheet Applications	6
	Select two of the following courses: AC 201 Principles of Accounting I, AC 202 Principles of Accounting II, any CA course, MG 121 Introduction to Marketing, MG 205 Human Relations in Management	6-8
Total credit hours		30-32

Administrative Support Technology Letter of Recognition (R)

This sequence of three courses is designed for persons who wish to develop skills in administrative support technology. To complete each course in this sequence, students need to demonstrate skills in computer applications, word processing, and office information systems and procedures. A grade of C or better is required in each course.

CA 101	Computer Keyboarding	3
CA 104	Professional Business Procedures	3
CA 131	Introduction to Word Processing Applications	3
Total credit hours		9

Desktop Publishing Letter of Recognition

This sequence of four courses is designed for persons who wish to develop skills in desktop publishing. To complete each course in this sequence, students need to demonstrate a basic understanding of microcomputers and their operating systems, the ability to type at least 25 words a minute (wam), and the knowledge and capability to create well-planned basic and advanced publications using a page layout software application. A grade of C or better is required in each course.

CA 100	Keyboarding Fundamentals*	1
CA 106	Using Microcomputer Operating Systems	3
CA 161	Desktop Publishing I	3
CA 261	Desktop Publishing II	3
Total credit hours		10

*The student may demonstrate ability to type at least 25 wam rather than completing CA 100.

COMPUTER PUBLISHING AND PRINTING MANAGEMENT

Computer Publishing and Printing Management (R)

Printing Management A.A.S.

This curriculum is designed to provide students with an understanding of the technical aspects of the printing industry and with a general business knowledge that may lead to employment in managerial, supervisory, or technical positions. It is a two-year semiprofessional curriculum leading to the A.A.S.

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

First Semester

CA 161	Desktop Publishing I	3
EN 101	Techniques of Reading and Writing	3
	<i>Mathematics foundation</i>	3
PR 118	Stripping and Platemaking I	3
PR 130	Introduction to QuarkXPress	4

Second Semester

CA 100	Keyboarding Fundamentals	1
	<i>English foundation</i>	3
MG 101	Principles of Management	3
PR 116	Principles of Offset Presses I	3
PR 131	Introduction to Photoshop	4
	<i>Arts or humanities distribution</i>	3

Third Semester

MG 102	Principles of Supervision	3
PR 120	Web Publishing	4
PR 212	Planning and Estimating	3
PR 281	Printing Internship	3
or		
	PR elective	3
	<i>Natural sciences lab distribution</i>	4

Fourth Semester

	<i>Health foundation</i>	1
PR 115	Introduction to Bindery and Finishing	3
PR 221	Production Management	3
	<i>Speech foundation</i>	3
	<i>Behavioral and social sciences distribution</i>	3
Total credit hours		63 (64)

Electronic Imaging Prepress Certificate (R)

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.

Electronic Imaging Prepress Certificate (continued)

CA 100	Keyboarding Fundamentals	.....1
CA 260	Desktop Publishing I	.....3
PR 130	Introduction to QuarkXPress	.....4
PR 131	Introduction to Photoshop	.....4
PR 232	Advanced Photoshop	.....4
	Professional electives*	.....3 (4)

Total credit hours 19 (20)

*Select AA 110, AA 121, AA 127, CA 261, CG 120, PR 117, or PR 118.

Printing Technology Certificate (R)

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.

CA 100	Keyboarding Fundamentals	.....1
CA 260	Desktop Publishing I	.....3
PR 115	Introduction to Bindery and Finishing	..3
PR 116	Principles of Offset Presses I	.....3
PR 117	Graphic Arts Photography I	.....3
PR 118	Stripping and Platemaking I	.....3
PR 212	Planning and Estimating	.....3
PR 216	Principles of Offset Presses II	.....3
	Program elective*	.....3 (4)

Total credit hours 25 (26)

*Select AA 121, AA 124, AR 103, AR 104, AR 105, CG 120, CG 125, PG 150, PR 221, or PR 281. Department approval is required to apply any elective not on this list to the award of the certificate.

COMPUTER SCIENCE AND TECHNOLOGIES

See also *Microcomputer Technologies and Web Careers*

The computer science and technologies curricula include two transfer degree programs, four certificate curricula, and one letter of recognition curriculum 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 A.A. in computer science and technologies.

The computer science and technologies program participates in an interdisciplinary Web careers program, which includes an A.A.S. and three certificate curricula. For more information on the Web careers program, see pages 144–146.

Computer Science (R)

Computer Science and Technologies A.A.

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. (Students not proficient in keyboarding may be required to take CA 100.)

General Education and Other Requirements (33 credit hours)

	English foundation	.....3
	Health foundation	.....1
MA 181	Calculus I	.....4
	Speech foundation	.....3
	Arts distribution	.....3
	Arts or humanities distribution	.....3
	Behavioral and social sciences distribution	.....6
	Humanities distribution	.....3
	Natural sciences distribution	.....7

Computer Science Fundamental Requirements (16 credit hours)

CS 103	Computer Science I	4
CS 204	Computer Science II	4
CS 256	Introduction to Discrete Structures	4
MA 182	Calculus II	4

Computer Science Electives (11 credit hours)

Select from courses with CS designators. Students should consult an adviser regarding requirements at transfer institutions.

Total credit hours 60

Information Systems

Computer Science and Technologies A.A.

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.

Due to the variation in such programs at four-year institutions, students are urged to consult an adviser about specific course selections.

General Education and Other Requirements (46–49 credit hours)

AC 201	Principles of Accounting I	4
AC 202	Principles of Accounting II	4
<i>EC 201</i>	<i>Principles of Economics I</i>	3
EC 202	Principles of Economics II*	3
EN 101	Techniques of Reading and Writing	3
	<i>English foundation</i>	3
	<i>Health foundation</i>	1 (3)
	<i>Mathematics foundation</i>	3 (4)
	<i>Speech foundation</i>	3
	<i>Arts distribution</i>	3
	<i>Arts or humanities distribution</i> [†]	3
	<i>Behavioral and social sciences distribution (other than EC)</i>	3
	<i>Humanities distribution</i> [†]	3
	<i>Natural sciences distribution</i>	7

Specialized Requirements (15 [16] credit hours)

CS 110	Computer Concepts	
or		
	CS or MA elective	3 (4)
CS 136	Systems Analysis and Design	3
CS 140	Introduction to Programming	3
CS 2xx	Intermediate Programming Language [‡]	3
BA 210	Statistics for Business Administration*	3
or		
MA 116	Elements of Statistics*	3

Total credit hours 61–65

*If this course is not required by a specific transfer institution, substitute a CS course in advanced programming or another CS course.

[†]A specific transfer institution may recommend a foreign language.

[‡]Choose CS 213 (Java), CS 215 (Visual Basic), CS 225 (C), or CS 226 (C++) as appropriate for a specific transfer institution.

Computer Programming Certificate

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.

CS 110	Computer Concepts*	3
CS 140	Introduction to Programming	3
	Intermediate languages [†]	6
	Advanced language [‡]	3
	CS elective or department-approved CA elective	3

Total credit hours 18

*May be replaced by another CS course with department consent.

[†]Select two courses from CS 213, CS 215, CS 225, CS 226, or other department-approved language.

[‡]The advanced language must correspond to one of the intermediate languages chosen.

Java Developer Certificate

This certificate recognizes the completion of training, skills attainment, and required knowledge for employment as a Java developer. Students should consult an adviser before beginning the curriculum.

CS 140	Introduction to Programming	.....3
CS 213	Java Programming Language	.....3
CS 214	Advanced Java Programming	
or		
CS 246	Data Structures Using Java	.....3
CS 220	Client-Server Programming with Java	.....3
	Department-approved CS electives	....6
Total credit hours		18

Object-Oriented Software Development Certificate

This certificate recognizes the completion of training, skills attainment, and required knowledge for employment in areas requiring C++ programming skills. Skills include analysis, design, programming, and testing using object-oriented languages such as C++ and Java. Students should consult an adviser before beginning the curriculum.

CS 136	Systems Analysis and Design	.....3
CS 140	Introduction to Programming	.....3
	Select one of the following combinations: CS 103 Computer Science I and CS 204 Computer Science II; CS 213 Java Programming Language and CS 246 Data Structures Using Java; or CS 226 Introduction to Object-Oriented Programming with C++ and CS 249 Advanced Object-Oriented Programming with C++	.....6–8
	Electives: Select two of the following: CS 214, CS 215, CS 218, CS 220, CS 234, CS 251, or another department-approved CS course	....6
Total credit hours		18–20

Oracle Developer Certificate

This curriculum emphasizes Oracle relational database programming. The curriculum provides flexibility in the programming language (either Java or Visual Basic) to be used as an interface to Oracle (or other) relational databases, and it also opens up the possibility of an interface to an object-oriented database. Students can earn this certificate along with an A.A. in computer science. This certificate is mainly intended for those who will specialize in modern relational databases.

CS 140	Introduction to Programming	.....3
CS 213	Java Programming Language	
or		
CS 215	Visual Basic Programming	.....3
CS 270	Introduction to Oracle	.....3
CS 271	Oracle Programming	.....3
CS 272	Oracle Forms and Reports	.....3
CS 276	Advanced Oracle Programming Using Java or Visual Basic	.....3
CS 278	Oracle Developer	.....3
Total credit hours		21

Oracle Database Fundamentals Letter of Recognition

This sequence of three courses is designed for persons who wish to develop skills in Oracle. Students must demonstrate skills in the following areas: fundamental concept, design, and architecture of the Oracle Database System; basic Oracle programming concepts using SQL; and the ability to customize forms and reports. A grade of C or better is required in each course in the sequence.

CS 270	Introduction to Oracle	.....3
CS 271	Oracle Programming	.....3
CS 272	Oracle Forms and Reports	.....3
Total credit hours		9

CRIMINAL JUSTICE A.A.S. (R)

The criminal justice curriculum is designed to prepare students for careers in the criminal justice system and for transfer to four-year colleges and universities. A strong academic core forms the basis of a liberal arts education and, combined with specialized career courses, offers the graduate the alternatives of entering the field or continuing in an institution of higher learning.

The curriculum is offered for those employed in criminal justice as well as for high school graduates interested in pursuing careers in local, state, federal, or private agencies in the field. Students are encouraged to seek assistance from criminal justice faculty in making course selections to suit their career goals and interests. Completion of all the curriculum requirements will lead to the award of the A.A.S.

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

First Semester

CJ	110	Administration of Justice	.....3
EN	101	Techniques of Reading and Writing	...3
		<i>Health foundation</i>	.....1 (3)
		<i>Mathematics foundation</i>	.....3
SO	101	Introduction to Sociology	.....3
		<i>Arts or humanities distribution</i>	.....3

Second Semester

CJ	111	Introduction to Law Enforcement	
		or	
CJ	230	Introduction to Corrections	.....3
CJ	221	Criminal Law	.....3
		<i>English foundation</i>	.....3
PS	101	<i>American Government</i>	.....3
PY	102	General Psychology	.....3

Third Semester

CJ	215	Organization and Administration	.....3
		CJ electives	.....6
		<i>Speech foundation</i>	.....3
		<i>Natural sciences lab distribution</i>	.....4

Fourth Semester

		CA or CS elective	.....3
CJ	242	Theory and Practice	.....3
CJ	244	Contemporary Issues	.....3
		CJ or SS elective	.....3
		<i>Behavioral and social sciences distribution</i>	.....3

Total credit hours 62 (64)

DIAGNOSTIC MEDICAL SONOGRAPHY

Statewide Program

Diagnostic Medical Sonography A.A.S. (TP)

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 of body tissues on a video monitor. The sonographer is responsible for performing the examination, providing patient care, and recording anatomic, pathologic, and/or physiologic data for interpretation by the physician.

This is a selective program with specific admissions requirements. For additional information, contact the Admissions Office at the Takoma Park Campus, 301-650-1501, or the program department.

Each of the diagnostic medical sonography courses builds upon 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.

At the end of the first year in the diagnostic medical sonography program, students will choose to specialize in one or more of the following tracks: general sonography, echocardiography, and vascular. Upon completion of this

Diagnostic Medical Sonography A.A.S.
(continued)

curriculum the graduate will receive an A.A.S. and be eligible to sit for the national registry examination, administered by the American Registry of Diagnostic Medical Sonographers, in the areas of ultrasound physics, abdomen, and obstetrics/gynecology; or cardiac physics and echocardiography; or vascular physics and vascular ultrasound.

A suggested course sequence for full-time students follows.

General Education and Other Requirements (33 credit hours)

<i>BI</i> 204	<i>Human Anatomy and Physiology I*</i>	4
<i>BI</i> 205	<i>Human Anatomy and Physiology II</i>	4
<i>EN</i> 101	<i>Techniques of Reading and Writing</i>	3
<i>EN</i> 102	<i>Techniques of Reading and Writing</i>	
<i>or</i>		
<i>EN</i> 109	<i>Writing for Technology and Business</i>	3
<i>HI</i> 125	<i>Medical Terminology I</i>	2
<i>HI</i> 126	<i>Medical Terminology II</i>	2
<i>HI</i> 135	<i>Concepts of Disease</i>	3
	<i>Mathematics foundation</i>	3
<i>PY</i> 102	<i>General Psychology</i>	3
<i>SP</i> 108	<i>Fundamentals of Speech</i>	3
	<i>Arts or humanities distribution</i>	3

Diagnostic Medical Sonography Fundamental Requirements (25 credit hours)

<i>MS</i> 101	Orientation to Diagnostic Medical Sonography	3
<i>MS</i> 102	Acoustical Physics and Instrumentation	2
<i>MS</i> 201	Introduction to Sectional Anatomy	3
<i>MS</i> 202	Acoustical Physics and Instrumentation II	2
<i>MS</i> 214	Special Topics in Ultrasound	3
<i>MS</i> 220	Sonography Practicum	1
<i>MS</i> 221	Sonography Practicum I	2
<i>MS</i> 222	Sonography Practicum II	4
<i>MS</i> 223	Sonography Practicum III	4
<i>MS</i> 224	Seminar—Diagnostic Medical Sonography	1

General Sonography Track (12 credit hours)

<i>MS</i> 112	Abdominal Sonography	3
<i>MS</i> 113	Obstetrics/Gynecology Sonography	3
<i>MS</i> 212	Abdominal Sonography II	3
<i>MS</i> 213	Obstetrics/Gynecology Sonography II	3

Total credit hours for general sonography track 70

Echocardiography Track (6 credit hours)

<i>MS</i> 215	Diagnostic Medical Sonography: Echocardiography	3
<i>MS</i> 218	Echocardiography II	3

Total credit hours for echocardiography track 67

Vascular Track (6 credit hours)

<i>MS</i> 216	Diagnostic Medical Sonography: Vascular Sonography	3
<i>MS</i> 219	Vascular Sonography II	3

Total credit hours for vascular track 67

**Students should check the prerequisite for BI 204.*

Diagnostic Medical Sonography Certificate (TP)

This certificate curriculum is designed for health care professionals, graduates of AMA programs, or those who are registry eligible and desire to become proficient in sonography. Credits earned in this curriculum may be applied toward the associate’s degree.

This is a selective curriculum with specific admissions requirements. For additional information, contact the Admissions Office at the Takoma Park Campus, 301-650-1501, or the program department.

Each of the diagnostic medical sonography courses builds upon material offered in the previous courses. Students in this curriculum are required to achieve a grade of C or better in each sonography course and to maintain current CPR certification.

At the end of the first year in this curriculum, students will choose to specialize in one or more of the following tracks: general sonography, echocardiography, and vascular. Upon completion of this curriculum, the graduate will receive a certificate and be eligible to sit for the national registry examination, administered by the American Registry of Diagnostic Medical Sonographers, in the areas of physics, abdomen, and obstetrics/gynecology; or cardiac physics and echocardiography; or vascular physics and vascular ultrasound.

Diagnostic Medical Sonography Fundamental Requirements (25 credit hours)

EN 101	Techniques of Reading and Writing . . .	3
MS 102	Acoustical Physics and Instrumentation	2
MS 201	Introduction to Sectional Anatomy . . .	3
MS 202	Acoustical Physics and Instrumentation II	2
MS 214	Special Topics in Ultrasound	3
MS 220	Sonography Practicum	1
MS 221	Sonography Practicum I	2
MS 222	Sonography Practicum II	4
MS 223	Sonography Practicum III	4
MS 224	Seminar—Diagnostic Medical Sonography	1

General Sonography Track (12 credit hours)

MS 112	Abdominal Sonography	3
MS 113	Obstetrics/Gynecology Sonography . .	3
MS 212	Abdominal Sonography II	3
MS 213	Obstetrics/Gynecology Sonography II .	3

Total credit hours for general sonography track 37

Echocardiography Track (6 credit hours)

MS 215	Diagnostic Medical Sonography: Echocardiography	3
MS 218	Echocardiography II	3

Total credit hours for echocardiography track 31

Vascular Track (6 credit hours)

MS 216	Diagnostic Medical Sonography: Vascular Sonography	3
MS 219	Vascular Sonography II	3

Total credit hours for vascular track 31

EDUCATION

The Education Department offers curricula designed to prepare students for working with children in a variety of settings: two early childhood education curricula (A.A.S. and certificate) and the Teacher Education Transfer Program (A.A.T.).

Early Childhood Education Technology A.A.S. (R)

This curriculum is designed to prepare students to work with children from infancy through age five in a variety of child care settings. The curriculum has a core of 25 credit hours directly related to early childhood development and child care. 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

ED 120	Child Development for Child Care Workers	3
EN 101	Techniques of Reading and Writing . . .	3
GE 101	Introduction to Geography	3
<i>HE 100</i>	<i>Principles of Healthier Living</i>	<i>1</i>
<i>PY 102</i>	<i>General Psychology</i>	<i>3</i>
<i>SP 108</i>	<i>Fundamentals of Speech</i>	<i>3</i>

Second Semester

ED 121	Planning Curricula for Child Care	3
ED 122	Child Care Practicum and Workshop . .	3
ED 123ABC	Infant and Toddler Development and Curricular Planning	3
	<i>English foundation</i>	<i>3</i>
SO 101	Introduction to Sociology	3

Third Semester

ED 213	Social Development in Young Children	3
	Curriculum seminar*	2
	<i>Mathematics foundation</i>	<i>3</i>
	<i>Arts distribution</i>	<i>3</i>
	History (select from humanities distribution)	3

Fourth Semester

ED 130	First Start: Care of Infants and Toddlers with Disabilities	3
ED 215	Planning and Administering Child Care Programs	3
	Curriculum seminar*	2
	<i>Natural sciences lab distribution</i>	<i>4</i>
	Electives [†]	5 (6)

Total credit hours 62 (63)

*Select ED 210, ED 211, or ED 212.

[†]Select two electives from AR 123, BA 101, ED 200, FM 103, HE 107, MU 119, PY 215, and SO 204.

Early Childhood Education Certificate (R)

This certificate curriculum is designed to prepare students to work in a variety of child and family day care settings with children from infancy through age five.

The curriculum consists of a core of required courses, including a semester of supervised practicum experience in an approved placement and 12 semester hours in academic courses listed below. In addition to this required core, students are to select one course each from groupings related to arts and crafts, and health and safety. An elective chosen from the list provided completes the curriculum, designed to be completed within two semesters or over a longer period of time if a student chooses.

Required Courses

ED 120	Child Development for Child Care Workers	3
ED 121	Planning Curricula for Child Care	3
ED 122	Child Care Practicum and Workshop	3
EN 101	Techniques of Reading and Writing	3
PY 102	General Psychology	3
PY 215	Child Psychology*	3
SO 101	Introduction to Sociology	3

Students will select one of the following courses:

AR 123	Crafts	3
ED 200	Children's Literature	3
MU 119	Music Fundamentals for Classroom Teachers	3
PE 200	Fundamentals of Elementary School Physical Education	3

Students will select one of the following courses:

FM 103	Introduction to Nutrition	3
HE 107	First Aid and Safety in the Home, School, and Community	2

Students will select one free elective[†]3

Total credit hours 29 (30)

*This course has a prerequisite.

[†]Select BA 101, ED 123, EN 102, FM 103, HE 107, SO 104, or SO 204.

Teacher Education Transfer Program A.A.T.

This curriculum is designed to provide the first two years of a four-year bachelor's degree and teacher certification. The curriculum prepares students to transfer as juniors to an elementary education program at a four-year college or university in the state of Maryland. The associate of arts in teaching (A.A.T.) has been articulated with all of the transfer programs in elementary education in the state of Maryland. This program enables students to fulfill their General Education requirements, participate in field-work experiences, and complete a core of professional education course work appropriate for the first two years of teacher preparation. Students who receive the A.A.T. must have a GPA of 2.75 within this program of study and must pass the Praxis I exam. Praxis I: Pre-Professional Skills Test (PPST) assesses basic reading, writing, and mathematics skills. Students should take Praxis I after they have completed 45 semester credits, including the mathematics requirement of the A.A.T. program.

First Semester*

BI 101	General Biology	4
ED 101	Foundations of Education	3
ED 102	Field Experience in Elementary Education	1
EN 101	Techniques of Reading and Writing	3
HS 201	History of the United States	3
MA 130	Elements of Mathematics I	4

Second Semester

ED 140	Introduction to Special Education	3
ED 141	Field Experience in Special Education	1
EN 102	Techniques of Reading and Writing	3
HS 202	History of the United States	3
MA 131	Elements of Mathematics II	4
PC 101	Physical Science I	4

Third Semester

ED 216	Processes and Acquisition of Reading ..3
IS 273	<i>Integrated Arts</i> .....3
MA 132	Elements of Mathematics III .....4
PC 102	<i>Physical Science II</i> .....4
PY 102	<i>General Psychology</i> .....3
PRACTICE EXAM	

Fourth Semester

AN 101	<i>Introduction to Social and Cultural Anthropology</i> .....3
GE 110	Global Geography .....3
HE 101	<i>Personal and Community Health</i> .....3
PY 227	Educational Psychology .....3
SP 108	<i>Fundamentals of Speech</i> .....3

Total credit hours 68

*Students must demonstrate proof of computer literacy.

ENGINEERING SCIENCE A.S.

This curriculum is designed to provide the first two years of a four-year program leading to the award of a B.S. in engineering. A student planning to transfer to the University of Maryland College Park in a particular field of engineering should follow the appropriate track listed below. A student interested in Johns Hopkins University should follow the general engineering track. A student planning to transfer to a different engineering school or interested in an unlisted engineering field should consult with an engineering adviser.

Completion of all requirements for any track in engineering science will lead to the award of the A.S. in engineering science.

**Aerospace Engineering
Engineering Science A.S.**

This track will prepare students to transfer to other aerospace engineering programs. 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 University of Maryland College Park.*

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

First Semester

CH 102	<i>Principles of Chemistry II</i> .....4
EN 102	<i>Techniques of Reading and Writing</i> .....3
ES 100	Introduction to Engineering Design ...3
	<i>Health foundation</i> .....1
MA 181	<i>Calculus I</i> .....4

Second Semester

ES 102	Statics .....3
MA 182	Calculus II .....4
PH 161	General Physics I .....3
	<i>Behavioral and social sciences distribution</i> .3
	<i>Humanities distribution</i> .....3

Third Semester

ES 240	Scientific and Engineering Computation .....3
MA 280	Multivariable Calculus .....4
PH 262	<i>General Physics II</i> .....4
	<i>Arts distribution</i> .....3

Fourth Semester

ES 221	Dynamics .....3
ES 232	Thermodynamics .....3
MA 282	Differential Equations .....3
PH 263	General Physics III .....4
	<i>Behavioral and social sciences distribution</i> .3

Total credit hours 61

*ENAE 283 *Fundamentals of Aeronautical Systems* should be taken at University of Maryland College Park in order to achieve full junior standing upon transfer.

Biological Resources Engineering Engineering Science A.S.

This track will prepare students to transfer to other biological resources engineering programs. Specific requirements in colleges vary, and the student preparing for transfer to a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the biological resources 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.

First Semester

CH 102	<i>Principles of Chemistry II</i>	4
EN 102	<i>Techniques of Reading and Writing</i>	3
ES 100	Introduction to Engineering Design . . .	3
MA 181	Calculus I	4
	<i>Behavioral and social sciences distribution</i> . . .	3

Second Semester

BI 107	Principles of Biology	4
CH 120	Essentials of Organic and Biochemistry	4
	<i>Health foundation</i>	1
MA 182	Calculus II	4
PH 161	General Physics I	3

Third Semester

BI 203	Microbiology	4
EC 201	<i>Principles of Economics I</i>	3
ES 102	Statics	3
MA 280	Multivariable Calculus	4
PH 262	<i>General Physics II</i>	4

Fourth Semester

ES 220	Mechanics of Materials*	3
MA 282	Differential Equations	3
PH 263	General Physics III	4
	<i>Arts distribution</i>	3
	<i>Humanities distribution</i>	3

Total credit hours 67

*Students may substitute ES 232.

Chemical Engineering Engineering Science A.S.

This track will prepare students to transfer to other chemical engineering programs. 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 University of Maryland College Park.

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

First Semester

CH 102	<i>Principles of Chemistry II</i>	4
EN 102	<i>Techniques of Reading and Writing</i>	3
ES 100	Introduction to Engineering Design . . .	3
	<i>Health foundation</i>	1
MA 181	Calculus I	4

Second Semester

ES 102	Statics	3
MA 182	Calculus II	4
PH 161	General Physics I	3
	<i>Humanities distribution</i>	3

Third Semester

CH 203	Organic Chemistry I	5
MA 280	Multivariable Calculus	4
PH 262	<i>General Physics II</i>	4
	<i>Behavioral and social sciences distribution</i> . . .	3

Fourth Semester

CH 204	Organic Chemistry II	5
MA 282	Differential Equations	3
PH 263	General Physics III	4
	<i>Arts distribution</i>	3
	<i>Behavioral and social sciences distribution</i> . . .	3

Total credit hours 62

Civil Engineering

Engineering Science A.S.

This track will prepare students to transfer to other civil engineering programs. Specific requirements in colleges vary, and the student preparing for transfer to a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the civil engineering program at University of Maryland College Park.*

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

First Semester

CH 102	<i>Principles of Chemistry II</i>	4
EN 102	<i>Techniques of Reading and Writing</i>	3
ES 100	Introduction to Engineering Design	3
	<i>Health foundation</i>	1
MA 181	<i>Calculus I</i>	4

Second Semester

ES 102	Statics	3
MA 182	Calculus II	4
PH 161	General Physics I	3
	<i>Arts distribution</i>	3
	<i>Humanities distribution</i>	3

Third Semester

ES 220	Mechanics of Materials	3
ES 221	Dynamics	3
MA 280	Multivariable Calculus	4
PH 262	General Physics II	4
	<i>Behavioral and social sciences distribution</i>	3

Fourth Semester

ES 232	Thermodynamics	3
ES 240	Scientific and Engineering Computation	3
MA 282	Differential Equations	3
PH 263	General Physics III	4
	<i>Behavioral and social sciences distribution</i>	3

Total credit hours 64

*ENCE 202 *Computational Methods in Civil Engineering* should be taken at University of Maryland College Park in order to achieve full junior standing upon transfer.

Computer Engineering

Engineering Science A.S.

This track will prepare students to transfer to other computer engineering programs. Specific requirements in colleges vary, and the student preparing for transfer to 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 College Park.

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

First Semester

CH 102	<i>Principles of Chemistry II</i>	4
EN 102	<i>Techniques of Reading and Writing</i>	3
ES 100	Introduction to Engineering Design	3
MA 181	<i>Calculus I</i>	4

Second Semester

CS 103	Computer Science I	4
	<i>Health foundation</i>	1
MA 182	Calculus II	4
PH 161	General Physics I	3
	<i>Behavioral and social sciences distribution</i>	3

Third Semester

CS 256	Introduction to Discrete Structures	4
EE 244	Digital Logic Design	3
ES 240	Scientific and Engineering Computation	3
PH 262	General Physics II	4
	<i>Humanities distribution</i>	3

Fourth Semester

CS 204	Computer Science II	4
EE 204	Basic Circuit Analysis	3
EE 206	Fundamental and Digital Circuit Laboratory	2
MA 282	Differential Equations	3
	<i>Arts distribution</i>	3
	<i>Behavioral and social sciences distribution</i>	3

Total credit hours 64

Electrical Engineering

Engineering Science A.S.

This track will prepare students to transfer to other electrical engineering programs. 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 University of Maryland College Park.

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

First Semester

CH 102	<i>Principles of Chemistry II</i>	4
EN 102	<i>Techniques of Reading and Writing</i>	3
ES 100	Introduction to Engineering Design . . .	3
	<i>Health foundation</i>	1
MA 181	Calculus I	4

Second Semester

EE 114	Programming Concepts for Engineering	4
EE 244	Digital Logic Design	3
MA 182	Calculus II	4
PH 161	General Physics I	3
	<i>Behavioral and social sciences distribution</i> .	3

Third Semester

ES 240	Scientific and Engineering Computation	3
MA 280	Multivariable Calculus	4
PH 262	General Physics II	4
	<i>Arts distribution</i>	3
	<i>Humanities distribution</i>	3

Fourth Semester

EE 204	Basic Circuit Analysis	3
EE 206	Fundamental and Digital Circuit Laboratory	2
MA 282	Differential Equations	3
PH 263	General Physics III	4
	<i>Behavioral and social sciences distribution</i> .	3

Total credit hours 64

Fire Protection Engineering

Engineering Science A.S.

This track will prepare students to transfer to other fire protection engineering programs. 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 University of Maryland College Park.

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

First Semester

CH 102	<i>Principles of Chemistry II</i>	4
EN 102	<i>Techniques of Reading and Writing</i>	3
ES 100	Introduction to Engineering Design . . .	3
	<i>Health foundation</i>	1
MA 181	Calculus I	4

Second Semester

ES 102	Statics	3
MA 182	Calculus II	4
PH 161	General Physics I	3
	<i>Behavioral and social sciences distribution</i> .	3
	<i>Humanities distribution</i>	3

Third Semester

ES 220	Mechanics of Materials	3
ES 221	Dynamics	3
MA 280	Multivariable Calculus	4
PH 262	General Physics II	4
	<i>Behavioral and social sciences distribution</i> .	3

Fourth Semester

ES 232	Thermodynamics	
	or	
ES 240	Scientific and Engineering Computation	3
MA 282	Differential Equations	3
PH 263	General Physics III	4
	<i>Arts distribution</i>	3

Total credit hours 61

Mechanical Engineering

Engineering Science A.S.

This track will prepare students to transfer to other mechanical engineering programs. 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 University of Maryland College Park.

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

First Semester

CH 102	<i>Principles of Chemistry II</i>	4
EN 102	<i>Techniques of Reading and Writing</i>	3
ES 100	Introduction to Engineering Design	3
	<i>Health foundation</i>	1
MA 181	<i>Calculus I</i>	4

Second Semester

ES 102	Statics	3
MA 182	Calculus II	4
PH 161	General Physics I	3
	<i>Behavioral and social sciences distribution</i>	3
	<i>Humanities distribution</i>	3

Third Semester

ES 221	Dynamics	3
MA 280	Multivariable Calculus	4
PH 262	<i>General Physics II</i>	4
	<i>Behavioral and social sciences distribution</i>	3

Fourth Semester

ES 232	Thermodynamics	3
ES 220	Mechanics of Materials	3
MA 282	Differential Equations	3
PH 263	General Physics III	4
	<i>Arts distribution</i>	3

Total credit hours 61

Nuclear Engineering

Engineering Science A.S.

This track will prepare students to transfer to other nuclear engineering programs. 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 nuclear engineering program at University of Maryland College Park.

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

First Semester

CH 102	<i>Principles of Chemistry II</i>	4
EN 102	<i>Techniques of Reading and Writing</i>	3
ES 100	Introduction to Engineering Design	3
	<i>Health foundation</i>	1
MA 181	<i>Calculus I</i>	4

Second Semester

ES 102	Statics	3
MA 182	Calculus II	4
PH 161	General Physics I	3
	<i>Behavioral and social sciences distribution</i>	3
	<i>Humanities distribution</i>	3

Third Semester

ES 221	Dynamics	3
ES 240	Scientific and Engineering Computation	3
MA 280	Multivariable Calculus	4
PH 262	<i>General Physics II</i>	4
	<i>Arts distribution</i>	3

Fourth Semester

EE 204	Basic Circuit Analysis	3
ES 232	Thermodynamics	3
MA 282	Differential Equations	3
PH 263	General Physics III	4
	<i>Behavioral and social sciences distribution</i>	3

Total credit hours 64

General Engineering

Engineering Science A.S.

This track is designed to provide students with the flexibility to transfer to engineering programs outside the University of Maryland system.* An engineering adviser should be consulted regarding the choice of engineering science courses to be used for the degree.

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

First Semester

CH 102	<i>Principles of Chemistry II</i>	4
EN 101	Techniques of Reading and Writing . . .	3
ES 100	Introduction to Engineering Design . . .	3
MA 181	<i>Calculus I</i>	4
	<i>Humanities distribution</i>	3

Second Semester

EN 102	<i>Techniques of Reading and Writing</i>	3
	ES elective [†]	3
MA 182	Calculus II	4
PH 161	General Physics I	3
	<i>Behavioral and social sciences distribution</i> . . .	3

Third Semester

	ES elective [†]	3
	<i>Health foundation</i>	1
MA 280	Multivariable Calculus	4
PH 262	<i>General Physics II</i>	4
	<i>Behavioral and social sciences distribution</i> . . .	3

Fourth Semester

	ES electives [†]	6
MA 282	Differential Equations	3
PH 263	General Physics III	4
	<i>Arts distribution</i>	3

Total credit hours 64

*Students transferring to Johns Hopkins University engineering program should take an additional six credits of humanities or social science electives.

[†]For Johns Hopkins University, select ES 102, ES 220, ES 221, or ES 232.

ELECTRONIC TECHNOLOGY (G)

Engineering Technologies A.A.S.

This program has been proposed for deletion pending final approval from MHEC.

FIRE SCIENCE FIRE SERVICE MANAGEMENT

Fire Science Fire Service Management A.A.S. (R)

Statewide Program

This program is designed for both the career and volunteer firefighter, and all uniformed fire service personnel preparing for rank promotions. It will help the individual understand current tactics used by fire officers for suppression of fires as well as current theories of personnel management and leadership. The individual will also learn how the fire service interacts with other agencies in the political arena, and will acquire a general understanding of the functions of the fire service personnel who are involved in fire investigation, fire code enforcement, and fire/rescue training.

Credits may be awarded to students who have MFRI certification in accordance with the most current edition of the *National Guide to Educational Credit for Training Programs* written by the American Council on Education, One Dupont Circle, Washington, DC 20036-1193.

General Education and Other Requirements (30 credit hours)

EN 101	Techniques of Reading and Writing3
EN 102	<i>Techniques of Reading and Writing</i>
or	
EN 109	<i>Writing for Technology and Business3</i> <i>Health foundation1</i> <i>Mathematics foundation3</i>
MG 205	Human Relations in Management3 <i>Speech foundation3</i> <i>Arts or humanities distribution3</i> <i>Behavioral and social sciences distribution . .3</i> <i>Natural sciences lab distribution4</i> General electives: These electives should be in the areas of accounting, computer applications, computer science, or stress management.4

Fire Science Requirements (18 credit hours)

FS 101	Fire Protection Organization3
FS 104	Fire Service Administration3
FS 105	Fundamentals of Fire Suppression3
FS 106	Introduction to Occupational Safety, Health, and Loss Control in Emergency Services
or	
FS 107	Community Fire Safety and Injury Prevention Education3
FS 112	Building Codes and Construction3
FS 201	Fire Prevention and Inspection3

Fire Science Electives (select 12 credit hours)

FS 106	Introduction to Occupational Safety, Health, and Loss Control in Emergency Services
or	
FS 107	Community Fire Safety and Injury Prevention Education*3
FS 214	Advanced Fire Tactics and Strategy3
FS 225	Fire and Arson Investigation3
FS 226	Advanced Fire and Explosive Investigation3
FS 250	Fire Protection Internship3

Total credit hours 60

*Students may not repeat the FS course selected to meet the Fire Science Requirements.

Fire and Arson Investigation Certificate (R)

Statewide Program

Fire and arson investigation is based on a fundamental understanding of many different facets of both fire science and criminal justice. Investigators are employed within a variety of public and private organizations. This certificate curriculum has been designed to be compatible with industry standards. Students may continue working toward the A.A.S. in either fire science fire service management or criminal justice.

CJ 110	Administration of Justice3
CJ 211	Criminal Investigation3
CJ 222	Criminal Evidence3
CJ 232	Criminal Forensics3
EN 101	Techniques of Reading and Writing3
EN 102	<i>Techniques of Reading and Writing</i>
or	
EN 109	<i>Writing for Technology and Business . . .3</i>
FS 112	Building Codes and Construction3
FS 225	Fire and Arson Investigation3
FS 250	Fire Protection Internship3
PY 102	General Psychology3
PY 213	Criminal and Legal Psychology
or	
PY 221	Introduction to Abnormal Psychology3

Total credit hours 33

Emergency Medical Technician—Basic Letter of Recognition

This three-course sequence covers the minimum level of certification for ambulance personnel, a prerequisite for admission into a paramedic curriculum. In order to complete the courses in this sequence, students must demonstrate skill competency in the following areas: recognizing the signs and symptoms of illness and injuries commonly encountered in the pre-hospital setting, providing appropriate patient care, understanding safety responsibilities, and understanding transfer of care responsibilities. Because of national and state requirements, all classes have mandatory attendance. Upon completion of FS 151 and FS 152, students must successfully complete an approved practicum.

Emergency Medical Technician—Basic Letter of Recognition *(continued)*

Students who complete this curriculum are eligible to take the Maryland and DOT EMT-Basic National Standard Certification Test. Contact the Montgomery County Emergency Services College for information on applying to join a fire and rescue company in the state of Maryland.

FS	151	Emergency Medical Technician— Basic I*	4
FS	152	Emergency Medical Technician— Basic II*	3
FS	153	Practicum: Emergency Medical Technician—Basic	1
Total credit hours			8

*The student must maintain a 70 percent average and can score no lower than 60 percent on any assessment. Failure to maintain a 70 percent average will result in the student being dropped from the course.

GENERAL STUDIES A.A.

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 is dependent 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. 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 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 <http://www.montgomerycollege.edu/departments/studev/transfer.htm>, visit a campus Career/Transfer Center, consult the *Montgomery College Transfer Manual*, and seek assistance from a counselor or adviser. Undecided students can facilitate their exploration with enrollment in the course DS 103 Career Development: Dynamics and Applications and by working closely with a counselor.

General Education and Other Requirements (36 [37] credit hours)

EN	101	Techniques of Reading and Writing ...	3
		<i>English foundation</i>	3
		<i>Health foundation*</i>	1
		<i>Mathematics foundation</i>	3
PE	101–199	Physical education elective*	1
		<i>Speech foundation</i>	3
		<i>Arts distribution</i>	3
		<i>Arts or humanities distribution</i>	3
		<i>Behavioral and social sciences distribution†</i>	6
		<i>Humanities distribution</i>	3
		<i>Natural sciences lab distribution</i>	4
		<i>Natural sciences non-lab or lab distribution</i>	3 (4)

General Electives (24 credit hours)‡

Select courses appropriate for major, transfer, career exploration, or other personal goal in consultation with a counselor or an adviser (see program description above).

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.

‡Only two credits of physical education courses numbered 101–199 may be used as electives.

GEOGRAPHY

See *Applied Geography*

HEALTH ENHANCEMENT, EXERCISE SCIENCE, AND PHYSICAL EDUCATION

Tracks in health enhancement, exercise science, and physical education are designed for students interested in adult fitness, personal training, worksite wellness, cardiac rehabilitation, health promotion, community health, teaching health or physical education on the elementary or secondary level, and athletic coaching.

Career possibilities in physical education and health have expanded beyond the traditional school setting during the past decade. Americans have grown more interested in personal health, fitness, wellness, and leisure-time physical activities. This has created a demand for professionals with specialized training to provide leadership and service in adult fitness and health promotion. In response to these changing societal interests and the resulting job market, the Department of Health Enhancement, Exercise Science, and Physical Education offers four tracks from which students may choose to fulfill their career goals: exercise science/health fitness leadership, gerontology, health education, and physical education teacher preparation/coaching.

Each track provides the first two years of a typical four-year curriculum leading to a baccalaureate degree. The A.A. in arts and sciences is awarded upon completion of all requirements in the specific track. Most career opportunities in fields related to these curricula require a bachelor's degree. The program at Montgomery College prepares students to efficiently transfer and complete their upper-level coursework at a four-year institution. A certificate curriculum in personal training is also available.

Colleges and universities vary in their requirements. Thus, it is important that students contact the program coordinators or departmental advisers prior to registration to ensure the design of a program that transfers efficiently.

Exercise Science/Health Fitness Leadership (R)

Arts and Sciences A.A.

This A.A. track is designed for the student whose objective, after completion of a baccalaureate degree, is to pursue a career in adult fitness, sports conditioning, or health promotion. Professional preparation in exercise science and health fitness offers employment opportunities as personal trainers, fitness and health promotion directors for employee worksite and hospital-based fitness/wellness programs, exercise specialists for cardiac rehabilitation programs, exercise physiologists with sports medicine centers, strength and conditioning specialists for college and professional athletic teams, and fitness and wellness coordinators with health clubs, YMCAs, resorts, hotels, and government and recreation agencies. Job markets in fields related to this program are expanding as our society continues to become more health conscious and aware of the benefits of fitness as a way of life. This track offers courses that are also appropriate for students interested in pursuing a degree in sports management, kinesiology, sport studies, athletic training, sport physical therapy, physical therapy, and therapeutic recreation.

Students will acquire a scientific foundation and develop the ability to apply theoretical information to practical real-life situations. Emphasis is on an understanding of the human body, lifetime fitness principles and training techniques, prevention and care of exercise-related injuries, nutrition, weight control, stress management, and other related lifestyle wellness topics. Students will learn to conduct fitness assessments, and they will acquire skills in the design, implementation, and supervision of individualized exercise and lifestyle change prescriptions. Exercise leadership development will focus on the acquisition of medically and biomechanically safe techniques in strength training, flexibility training, and cardiovascular conditioning.

Exercise Science/Health Fitness Leadership (continued)

Completion of the A.A. requirements in exercise science/health fitness leadership will prepare students for fitness certifications through nationally recognized professional organizations such as the American College of Sports Medicine and the American Council on Exercise. Successful completion of specialized courses such as PE 226 Aerobics Instructor Training and PE 240 Instructional Exercise Techniques for Older Adults allows students to be eligible to take specialized certifications in addition to the fitness certifications.

The Rockville Campus Life Fitness Center, the Fitness/Wellness Assessment Laboratory, the Employee Wellness Program, and other off-campus sites will provide students opportunities to obtain valuable practical experiences in the most current technologies used to develop and evaluate fitness and wellness.

First Semester

BI 101	General Biology	
or		
BI 107	Principles of Biology	.....4
EN 101	Techniques of Reading and Writing*	...3
PE 182	Lifetime Fitness and Wellness (for majors)	.....2
PE 203	Overview of Physical Education	.....3
HE 101–202	Health elective	
or		
PE 213–238	Physical education major skills and theory	
or		
	Selected 100-level PE courses†	.....1 (3)
	Humanities distribution	.....3

Second Semester

EN 102	Techniques of Reading and Writing	.....3
HE 101–202	Health elective†	.....3
HE 105	First Aid and Basic Life Support	
or		
HE 107	First Aid and Safety in the Home, School, and Community	.....2 (3)
	Mathematics foundation	.....3
PE 230	Weight Training: Theory and Application	.....2
	Speech foundation	.....3

Third Semester

BI 204	Human Anatomy and Physiology I	.....4
PE 213–238	Physical education major skills and theory	
or		
PE 231	Topical Investigations—Practical Applications in Health Fitness Technology I	
or		
	Selected 100-level PE courses	.....1
PE 235	Fundamentals of Athletic Training	.....3
	Arts distribution	.....3
	Behavioral and social sciences distribution‡	.....3

Fourth Semester

BI 205	Human Anatomy and Physiology II	.....4
PE 213–238	Physical education major skills and theory	
or		
PE 232	Topical Investigations—Practical Applications in Health Fitness Technology II	
or		
	Selected 100-level PE courses	.....1
PE 237	Fitness Assessment and Exercise Program Designs	.....3
SO 212	Sport in American Society	
or		
	Behavioral and social sciences distribution‡	.....3
	Arts or humanities distribution	.....3

Total credit hours 60 (63)

*Students who qualify for a waiver of EN 101 may select three credits of electives with approval of the department.

†Students must consult with departmental adviser before selecting electives from PE, HE, or other categories. Selected 100-level PE courses include PE 129–138 aquatics elective, PE 174, or other 100-level PE courses with permission of the department.

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

Gerontology (R)

Arts and Sciences A.A.

This A.A. track is designed to introduce the student to the dynamic and rapidly expanding study of the human aging process. The curriculum provides a strong theoretical base in the biological, psychological, and sociological aspects of aging. Students will be provided with the opportunity to put theory into practice with field work experience in gerontology. The combination of classroom work and field experience

will provide students with “real world” knowledge and appreciation of careers in aging.

The gerontology track is also designed to acquaint students with city, county, state, and federal resources available to our aging population. In the course of their studies, students will be provided with valuable networking opportunities sure to enhance employability upon completion of the program.

Should the student desire to continue studies in gerontology, health education, or related fields, this track has been developed according to standards set by the Association for Gerontology in Higher Education ensuring transferability of credits earned to member institutions.

First Semester

BI 107	Principles of Biology	4
HE 101	<i>Personal and Community Health</i>	3
HE 130	Introduction to Gerontology	3
PY 102	<i>General Psychology</i>	3
SO 101	<i>Introduction to Sociology</i>	3

Second Semester

EN 102	<i>Techniques of Reading and Writing</i>	3
CH 101	Principles of Chemistry I (suggested)	
or		
CH 109A/B	Chemistry and Society Laboratory	4
HE 200	Introduction to Health Behaviors	3
	<i>Mathematics foundation</i>	3
SO 210	Aging in America	3

Third Semester

BI 204	<i>Human Anatomy and Physiology I</i>	4
HE 105	First Aid and Basic Life Support	3
HE 230	Health in the Later Years	3
	<i>Arts distribution</i>	3
	<i>Humanities distribution</i>	3

Fourth Semester

BI 205	<i>Human Anatomy and Physiology II</i>	4
PE 240	Instructional Exercise Techniques for	
	Older Adults	3
	<i>Speech foundation</i>	3
	<i>Arts or humanities distribution</i>	3

Total credit hours 61

Health Education (R)

Arts and Sciences A.A.

This A.A. 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

BI 101	General Biology	
or		
BI 107	Principles of Biology	4
EN 101	<i>Techniques of Reading and Writing*</i>	3
HE 101	<i>Personal and Community Health</i>	3
HE 120	The Science and Theory of Health	3
PY 102	<i>General Psychology</i>	3

Second Semester

CH 101	Principles of Chemistry I	
or		
CH 109A/B	Chemistry and Society/Chemistry and Society Laboratory ¹	4
EN 102	<i>Techniques of Reading and Writing</i>	3
HE 200	Introduction to Health Behaviors	3
	<i>Mathematics foundation</i>	3
SO 101	<i>Introduction to Sociology</i>	3

Health Education (continued)**Third Semester**

BI 204	<i>Human Anatomy and Physiology I</i>	4
PE 182	Lifetime Fitness and Wellness	
or		
	Health electives [‡]	5 (6)
	<i>Arts distribution</i>	3
	<i>Humanities distribution</i>	3

Fourth Semester

BI 205	<i>Human Anatomy and Physiology II</i>	4
	<i>Speech foundation</i>	3
	<i>Arts or humanities distribution</i>	3
	Health electives [‡]	3

Total credit hours 60 (61)

*Students who qualify for a waiver of EN 101 may select three credits of electives with approval of the department.

†If CH 109 is selected, both CH 109A and CH 109B must be taken.

‡Students must consult with departmental adviser before selecting electives from HE or other categories. Select health electives from HE 105, HE 107, HE 108, HE 111, HE 202, and HE 204.

Personal Training Certificate (R)

The personal training certificate curriculum has been designed to develop innovative fitness specialists who are knowledgeable and skilled in one-to-one fitness and wellness instruction. The curriculum blends science and theory with practical application and hands-on apprenticeship experiences.

Students will acquire an academic foundation in the fundamental principles of exercise and nutrition, and a basic understanding of human anatomy and physiology. Practical skill training will focus on the development of expertise in fitness assessment, creative health and fitness programming, biomechanically sound exercise technique, training methodology, injury prevention and care, lifestyle change prescription, personalized exercise leadership, and personal training business practice. Specialized courses will prepare trainers to meet clients in the home or at the fitness center to guide them through programs tailored to meet an array of health enhancement and performance-related goals.

The certificate curriculum offers the educational framework and basic competencies for entry-level career opportunities for full- or part-time employment. Completion of the certificate requirements will prepare students for many of the nationally recognized personal training certification examinations. Students must meet CPR requirements to participate in apprenticeship experiences.

BI 204	<i>Human Anatomy and Physiology I</i> *	4
BI 205	<i>Human Anatomy and Physiology II</i> *	4
HE 105	First Aid and Basic Life Support	
or		
HE 107	First Aid and Safety in the Home, School, and Community	2 (3)
HE 108	Nutrition for Fitness and Wellness	3
	Health elective(s)	
or		
	Physical education elective(s) [†]	3
PE 182	Lifetime Fitness and Wellness	2
PE 230	Weight Training: Theory and Application/P.E. Majors	2
PE 235	Fundamentals of Athletic Training/ P.E. Majors	3
PE 237	Fitness Assessment and Exercise Program Designs	3
PE 238	Personal Training Techniques	3
Total credit hours 29 (30)		

*Prerequisite four hours of biological science.

†Select from PE 135, PE 174, PE 183, PE 185, PE 186, PE 187, PE 188, PE 226, PE 231, PE 232, PE 233, PE 234, and/or HE 101–204.

Physical Education Teacher Preparation/Coaching (R)

Arts and Sciences A.A.

This A.A. track provides the first two years of a teacher preparation program for the elementary and secondary grade levels.

Physical educators plan and direct appropriate learning experiences that focus on helping students learn to enjoy physical activity as a lifelong pursuit. Physical education specialists are trained to create teaching/learning environments where students improve movement abilities, enhance performance knowledge and motor skills, increase physical fitness, and experience personal growth both socially and emotionally.

This track also includes foundation courses for students interested in coaching athletes on the interscholastic and other levels. Athletics involves recruiting, coaching, managing, and administering teams that compete against other athletic programs. Athletic programs have significantly different goals from physical education, yet often share facilities, equipment, fields, and teachers.

First Semester

BI 101	General Biology	
or		
BI 107	Principles of Biology	4
EN 101	Techniques of Reading and Writing*	3
HE 105	<i>First Aid and Basic Life Support</i>	
or		
HE 107	<i>First Aid and Safety in the Home, School, and Community</i>	2 (3)
PE 182	Lifetime Fitness and Wellness (for majors)	2
PE 203	Overview of Physical Education	3
PE 213–238	Physical education major skills and theory	2

Second Semester

EN 102	<i>Techniques of Reading and Writing</i>	3
HE 101	Personal and Community Health	3
	<i>Mathematics foundation</i>	3
PE 213–238	Physical education major skills and theory [†]	2
	<i>Speech foundation</i>	3

Third Semester

BI 204	<i>Human Anatomy and Physiology I</i>	4
PE 200	Foundations of Elementary School Physical Education	
or		
PE 213–238	Physical education major skills and theory [†]	
or		
HE 108–202	Health electives [†]	5 (6)
	<i>Behavioral and social sciences distribution</i> [‡]	3
	<i>Humanities distribution</i>	3

Fourth Semester

BI 205	<i>Human Anatomy and Physiology II</i>	4
PE 213–238	Physical education major skills and theory	
or		
	Selected 100-level PE courses [†]	2
SO 212	<i>Sport in American Society</i>	
or		
	<i>Behavioral and social sciences distribution</i> [‡]	3
	<i>Arts distribution</i>	3
	<i>Arts or humanities distribution</i>	3

Total credit hours 60 (62)

*Students who qualify for a waiver of EN 101 may select three credits of electives with approval of the departmental adviser.

†Students must consult with departmental adviser before selecting electives from PE, HE, or other categories. With departmental permission, two credits of selected 100-level PE courses may be substituted for PE 213–238 major skills courses. Recommended selections include PE 129–138 aquatics elective and PE 174.

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

HEALTH INFORMATION TECHNOLOGY

Health Information Technology A.A.S. (TP)

This curriculum is designed to prepare students to function as health information 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 technology program is accredited by the Commission on Accreditation of Allied Health Education Programs in cooperation with the American Health Information Management Association’s Council on Accreditation. Upon successful completion of the program, the graduate will receive the A.A.S. and will be eligible to apply to take the accreditation examination given by the American Health Information Management Association.

The health information 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

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

Health Information Technology A.A.S.
(continued)

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 technology course before being allowed to proceed to the next course.

This is a selective program with specific admissions requirements. For additional information, contact the Admissions Office at the Takoma Park Campus, 301-650-1501, or the program department.

Full-time and part-time students must see the program coordinator to choose an appropriate sequence of courses as outlined in the *Health Information Technology Student Handbook*. All students *must* complete HI-designated courses within the three years prior to graduation. HI-designated courses not meeting this time requirement *must* be retaken, or the student must test out in current course content.

General Education and Other Requirements (34 credit hours)

BI 204	<i>Human Anatomy and Physiology I*</i>	4
BI 205	<i>Human Anatomy and Physiology II</i>	4
CA 120	<i>Computer Applications I</i>	3
EN 101	<i>Techniques of Reading and Writing</i>	3
	<i>English foundation</i>	3
HE 107	<i>First Aid and Safety in the Home, School, and Community</i>	2
MA 110	<i>Survey of College Mathematics</i>	
or		
MA 116	<i>Elements of Statistics</i>	3
MG 205	<i>Human Relations in Management</i>	3
SP 108	<i>Fundamentals of Speech</i>	
or		
SP 112	<i>Business and Professional Speech Communication</i>	3
	<i>Arts or humanities distribution</i>	3
	<i>Behavioral and social sciences distribution</i>	3

Health Information Technology Requirements (36 credit hours)

HI 100	Introduction to and Legal Aspects of Health Information Systems	4
HI 103	Assembly and Analysis and Alternate Health Care Delivery	2
HI 111	Clinical Applications I	1
HI 112	Health Information Automation and Management	4
HI 125	Medical Terminology I	2
HI 126	Medical Terminology II	2
HI 135	Concepts of Disease	3
HI 200	Coding, Abstracting, and Indexing I	4
HI 202	Health Information Statistics and Quality Improvement	3
HI 211	Clinical Applications II	2
HI 212	Clinical Applications III	1
HI 213	CPT-4 Coding	2
HI 214	Introduction to Pharmacology	1
HI 220	Coding, Abstracting, and Indexing II	3
HI 225	Health Information Research	2
	Total credit hours	70

*Students should check the prerequisite for BI 204.

Medical Coder/Abstractor Certificate (TP)

The medical coder/abstractor certificate curriculum is designed to prepare students to function as medical coders and abstractors in health record services located in hospitals, nursing homes, ambulatory care facilities, insurance companies, and governmental agencies.

The coder/abstractor 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.

All students *must* complete HI-designated courses within the three years prior to graduation. HI-designated courses not meeting this time requirement *must* be retaken, or the student must test out in current course content.

BI 204	Human Anatomy and Physiology I*4
BI 205	Human Anatomy and Physiology II4
EN 101	Techniques of Reading and Writing3
HI 103	Assembly and Analysis and Alternate Health Care Delivery2
HI 125	Medical Terminology I2
HI 126	Medical Terminology II2
HI 135	Concepts of Disease3
HI 200	Coding, Abstracting, and Indexing I4
HI 213	CPT-4 Coding2
HI 214	Introduction to Pharmacology1
HI 220	Coding, Abstracting, and Indexing II3
Total credit hours 30	

*Students should check the prerequisite for BI 204.

Medical Coder/Abstractor/Biller Certificate (TP)

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. The biller option will also teach students how to function in the physician office environment and will emphasize specialty coding and the electronic billing component of that job.

All students *must* complete HI-designated courses within the three years prior to graduation. HI-designated courses not meeting this time requirement *must* be retaken, or the student must test out in current course content.

BI 204	Human Anatomy and Physiology I*4
BI 205	Human Anatomy and Physiology II4
EN 101	Techniques of Reading and Writing3
HI 103	Assembly and Analysis and Alternate Health Care Delivery2
HI 125	Medical Terminology I2
HI 126	Medical Terminology II2
HI 135	Concepts of Disease3
HI 200	Coding, Abstracting, and Indexing I4
HI 213	CPT-4 Coding2
HI 214	Introduction to Pharmacology1
HI 220	Coding, Abstracting, and Indexing II3
HI 221	Ambulatory Care Coding2
HI 222	Electronic Patient Billing2
Total credit hours 34	

*Students should check the prerequisite for BI 204.

HOSPITALITY MANAGEMENT Hospitality Management A.A.S. (R)

This curriculum is designed to provide a theoretical and practical approach to management in the hospitality industry. A balance of food and hotel classes along with management requirements make up the core of the program. The core is supplemented by General Education requirements. Emphasis is placed on entry-level and midlevel hotel, food, and institutional administration, with practical experience and training acquired through part-time and summer employment in the hospitality industry.

First Semester

EN 101	Techniques of Reading and Writing3
	<i>Health foundation1 (3)</i>
HM 101	Introduction to the Hospitality Industry3
	<i>Mathematics foundation3</i>
MG 101	Principles of Management3
	<i>Speech foundation3</i>

Second Semester

	<i>English foundation3</i>
FM 103	Introduction to Nutrition3
FM 105	Food Service Sanitation1
FM 107	Food and Beverage Management3
HM 143	Hotel Front Office Management3
	<i>Natural sciences lab distribution*4</i>

Hospitality Management A.A.S. (continued)

Third Semester

AC 201	Principles of Accounting	4
FM 110	Principles of Food Production— Lecture	2
FM 111	Principles of Food Production— Laboratory	2
HM 201	Lodging and Food Service Law	3
MG 121	Introduction to Marketing	3
	<i>Behavioral and social sciences distribution</i> . . .	3

Fourth Semester

FM 204	Catering and Banquets	3
FM 208	Food and Beverage Cost Controls	3
HM 207	Legal Issues in Labor Management	3
HM 210	Hospitality Practicum	3
HM 240	Lodging and Food Service Sales and Advertising	3
	<i>Arts or humanities distribution</i> [†]	3
	Total credit hours 68 (70)	

*CH 109A and B are recommended.

[†]A foreign language is recommended.

Food and Beverage Management Certificate (R)

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.

EN 101	Techniques of Reading and Writing	3
FM 103	Introduction to Nutrition	3
FM 105	Food Service Sanitation	1
FM 107	Food and Beverage Management	3
FM 110	Principles of Food Production— Lecture	2
FM 111	Principles of Food Production— Laboratory	2
FM 204	Catering and Banquets	3
FM 208	Food and Beverage Cost Control	3
HM 210	Hospitality Practicum	3
	HM or MG elective	3
MG 100	Managing Diversity in the Workplace	3
	Total credit hours 29	

Meeting and Conference Planners Certificate (R)

This curriculum involves the growing field of meeting planning. The curriculum provides the student with a background in food and beverage management and costs; the legal aspects of lodging and food services and the marketing of those services; and meeting and conference operations. The student will also be required to take general education courses selected to enhance the knowledge of the core curriculum.

EN 101	Techniques of Reading and Writing	3
EN 109	Writing for Technology and Business	3
FM 107	Food and Beverage Management	3
FM 204	Catering and Banquets	3
FM 208	Food and Beverage Cost Controls	3
HM 201	Lodging and Food Service Law	3
HM 240	Lodging and Food Service Sales and Advertising	3
HM 250	Meeting and Conference Operations	3
MG 102	Principles of Supervision	3
MG 121	Introduction to Marketing	3

Total credit hours 30

INTERIOR DESIGN

Students interested in interior design can earn an A.A., an A.A.S., a certificate (three certificates are available), or a letter of recognition. These programs are described in the following sections.

Interior Design—Preprofessional (R) *Arts and Sciences A.A.*

This 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 A.A. 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

AR 101	<i>Drawing I</i> .....	.3
AR 103	<i>Design I</i> .....	.3
CT 181	Architectural Drafting Techniques .....	.3
ID 101	Interior Design I .....	.3
	<i>Health foundation</i> .....	.1
	<i>Mathematics foundation</i> .....	.3

Second Semester

	<i>English foundation</i> .....	.3
ID 104	Interior Design II* .....	.3
	ID professional electives .....	.3
	<i>Humanities distribution</i> .....	.3
	<i>Natural sciences lab distribution</i> [†]4

Third Semester

AR 107	Art History I	
or		
AR 209	History of Architecture I	
or		
ID 211	Historic Interiors I* .....	.3
ID 106	Interiors: Advanced Presentation Techniques* .....	.3
ID 221	Interior Design: Residential* .....	.3
	<i>Behavioral and social sciences distribution</i> .....	.6

Fourth Semester

AR 108	Art History II	
or		
AR 210	History of Architecture II	
or		
ID 212	Historic Interiors II* .....	.3
ID 222	Interior Design: Commercial/Contract* .....	.3
ID 260	Business Practices and Procedures for Interior Design* .....	.3
SP 108	<i>Fundamentals of Speech</i> .....	.3
	<i>Natural sciences non-lab distribution</i> .....	.3

Total credit hours 62

*This ID course is not offered every semester; advising by interior design coordinator is required.

[†]CH 109A and B or PH 110 is recommended.

Interior Design—Preprofessional (R) A.A.S.

This program prepares students for entry-level positions in the interior design and related professions. Content offerings will include fundamental design; drawing; color; space planning; 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 the requirements for this program will lead to the award of the A.A.S.

A suggested course sequence for full-time students follows; all students should consult an interior design adviser before entering the program.

First Semester

ID 101	Interior Design I .....	.3
ID 103	Interiors: Design Principles* .....	.3
ID 105	Interiors: Technical Drawing and Drafting* .....	.3
	<i>Health foundation</i> .....	.1
	<i>Speech foundation</i> .....	.3
	<i>Behavioral and social sciences distribution</i> .....	.3

Second Semester

ID 104	Interior Design II* .....	.3
ID 106	Interiors: Advanced Presentation Techniques* .....	.3
ID 180	Interiors: Computer Presentation Techniques* .....	.3
	<i>English foundation</i> .....	.3
	<i>Natural sciences lab distribution</i> [†]4

Third Semester

ID 211	Historic Interiors I* .....	.3
ID 221	Interior Design: Residential* .....	.3
ID 231	Textiles: History* .....	.1
ID 232	Textiles: Construction* .....	.1
ID 233	Textiles: Application* .....	.1
	ID professional electives [†]3
	<i>Mathematics foundation</i> .....	.3

Interior Design—Preprofessional A.A.S.
(continued)

Fourth Semester

ID 212	Historic Interiors II*	.....3
ID 222	Interior Design: Commercial/ Contract*	.....3
ID 260	Business Practices and Procedures for Interior Design*	.....3
	ID professional electives†	.....6
Total credit hours		62

*This ID course is not offered every semester; advising by interior design coordinator is required.

†CH 109A and B or PH 110 is recommended.

‡Students should consult with interior design adviser before selecting professional electives. Maximum of 3 credits from ID 261, ID 262, ID 281, and ID 282. Minimum of 5 credits from ID 241, 242.

Introductory Interior Design Certificate (R)

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.

ID 101	Interior Design I	.....3
ID 103	Interiors: Design Principles*	.....3
ID 104	Interior Design II*	.....3
ID 105	Interiors: Technical Drawing and Drafting*	.....3
ID 106	Interiors: Advanced Presentation Techniques*	.....3
or		
ID 180	Interiors: Computer Presentation Techniques*	.....3
ID 211	Historic Interiors I*	.....3
or		
ID 212	ID professional electives†	.....3
ID 212	Historic Interiors II*	.....3
or		
ID 260	ID professional electives†	.....3
	Business Practices and Procedures for Interior Design*	.....3
	ID professional electives†	.....6
Total credit hours		30

*This ID course is not offered every semester.

†ID professional electives: ID 221, ID 222, ID 231, ID 232, ID 233, ID 241, 242, ID 261. Select electives in consultation with interior design adviser.

Advanced Interior Design Certificate (R)

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, ADA, specifications, and other specialty career options within the interior design profession. Portfolio and/or resume review approval by the program adviser is required prior to enrollment in the advanced courses.

ID 106	Interiors: Advanced Presentation Techniques*	
and/or		
ID 180	Interiors: Computer Presentation Techniques*	.3(6)
ID 211	Historic Interiors I*	
and/or		
ID 212	Historic Interiors II*	.3(6)
ID 221	Interior Design: Residential*	
and/or		
ID 222	Interior Design: Commercial/Contract*	.3(6)
ID 260	Business Practices and Procedures for Interior Design*	.3
	CT and/or ID professional electives†	.9-18
Total credit hours		30

*This ID course is not offered every semester.

†Electives: ID 231, ID 232, ID 233, ID 241, 242, ID 261, ID 262, or CT ###, as determined in consultation with the interior design adviser.

Design Industry Partnership Certificate (R)

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, theater 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.

ID 101	Interior Design I	.3
ID 103	Interiors: Design Principles*	.3
ID 104	Interior Design II*	.3
ID 105	Interiors: Technical Drawing and Drafting*	.3
ID 260	Business Practices and Procedures for Interior Design*	.3
	Industry partner discipline elective†	.15
Total credit hours		30‡

*This ID course is not 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, computer graphics, construction, 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.

Kitchen and Bath Design Letter of Recognition

This sequence of five to seven courses is designed for persons who wish to develop skills in kitchen and bath design. To complete each course in this sequence, students must demonstrate skills in specific areas. A grade of C or better is required in each course.

CT 283	Mechanical and Electrical Systems	.3
ID 180	Interiors: Computer Presentation Techniques*	.3
ID 243	Kitchen Design*	.1
ID 244	Bath Design*	.1
	ID electives†	.3
Total credit hours		11

*This ID course is not offered every semester.

†Students are required to consult with interior design adviser to select electives.

LANDSCAPE TECHNOLOGY

Landscape Technology A.A.S. (G)

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.

General Education and Other Requirements (23 [25] credit hours)

BI 111	<i>Botany I*</i>	4
EN 101	Techniques of Reading and Writing	3
	<i>English foundation</i>	3
	<i>Health foundation</i>	1 (3)
	<i>Mathematics foundation</i>	3
	<i>Speech foundation</i>	3
	<i>Arts or humanities distribution</i>	3
	<i>Behavioral and social sciences distribution</i>	3

*BI 107 may be substituted with permission of the curriculum adviser.

Landscape Technology Core Requirements (22 [23] credit hours)

BA 101	Introduction to Business	
or		
MG 101	Principles of Management	
or		
MG 205	Human Relations in Management	3
CA 120	Introduction to Computer Applications	3
CH 100A	Introductory College Chemistry	
or		
CH 101	Principles of Chemistry I	3 (4)
LN 101	Introduction to Landscape Technology	2
LN 108	Plant Materials I	3
LN 109	Plant Materials II	3
LN 118	Landscape Management	3
LN 280	Landscape Technology Internship	2

In addition to the preceding list, select at least 15 credits from the following two course lists. Please consult a landscape technology adviser before selecting these courses.

Landscape Contracting Courses

LN 110	Herbaceous Plant Materials	3
LN 115	Water Garden Management	2
LN 190	Pesticide Use and Safety	2
LN 204	Landscape Construction Methods and Estimating	3
LN 209	Interior and Greenhouse Plants	3
LN 215	Pest Management	3
LN 217	Landscape Machinery Operations and Maintenance	2
LN 222	Turfgrass Management	3
LN 223	Diseases of Ornamental Plants	3
LN 225	Nursery Management	3

Landscape Design Courses

LN 110	Herbaceous Plant Materials	3
LN 115	Water Garden Management	2
LN 120	Landscape Graphics	3
LN 130	Landscape Design	3
LN 204	Landscape Construction Methods and Estimating	3
LN 240	Professional Landscape Graphics	3

Total credit hours 60 (63)

Landscape Technology Certificate (G)

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 A.A.S. 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 LN 118, LN 190, LN 215, LN 222, and LN 223. For more information contact the landscape technology adviser or the Maryland Department of Agriculture.

Landscape Technology Core Requirements (16 credit hours)

BA 101	Introduction to Business	
or		
MG 101	Principles of Management	
or		
MG 205	Human Relations in Management	....3
LN 101	Introduction to Landscape Technology	.2
LN 108	Plant Materials I	.....3
LN 109	Plant Materials II	.....3
LN 118	Landscape Management	.....3
LN 280	Landscape Technology Internship	.....2

In addition to the preceding list, select five courses from the following two course lists. Please consult a landscape technology adviser before selecting these courses.

Landscape Contracting Courses

LN 110	Herbaceous Plant Materials	.....3
LN 115	Water Garden Management	.....2
LN 190	Pesticide Use and Safety	.....2
LN 204	Landscape Construction Methods and Estimating	.....3
LN 209	Interior and Greenhouse Plants	.....3
LN 215	Pest Management	.....3
LN 217	Landscape Machinery Operations and Maintenance	.....2
LN 222	Turfgrass Management	.....3
LN 223	Diseases of Ornamentals	.....3
LN 225	Nursery Management	.....3

Landscape Design Courses

LN 110	Herbaceous Plant Materials	.....3
LN 115	Water Garden Management	.....2
LN 120	Landscape Graphics	.....3
LN 130	Landscape Design	.....3
LN 204	Landscape Construction Methods and Estimating	.....3
LN 240	Professional Landscape Graphics	.....3

Total credit hours 27 (31)

LIBERAL ARTS AND SCIENCES

There are three tracks in the liberal arts and sciences curricula: arts, international studies, and science or mathematics. These tracks are designed for students who plan to earn the bachelor's degree from the upper division of a college or university or for those who do not plan to enter specific professional training. They stress the ideas and principles of the general fields of learning prior to later specialization in a major field. Completion of all requirements for any of these tracks will lead to the award of the A.A. in arts and sciences.

Electives should be chosen to accommodate the student's plans for advanced study. Most colleges require that the basic courses in the student's field of specialization be taken in the first two years as prerequisites for the more advanced courses taken in the junior and senior years.

Majors in biological sciences should include within their first two years at least one year each of chemistry, physics, and mathematics, and zoology or botany the second year.

Majors in economics should include MA 110 and MA 113 or MA 180 and MA 181; EC 103, EC 201, and EC 202.

AC 201 and 202 and/or HS 201 and 202 are strongly recommended for pre-law studies.

Majors in mathematics, chemistry, or physics should include mathematics through calculus.

Arts

Arts and Sciences A.A.

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

First Semester

EN 101	Techniques of Reading and Writing3
	<i>Health foundation</i>1 (3)
HS 151	History of Europe3
PS 101	<i>American Government</i>3
	<i>Speech foundation</i>3
	<i>Foreign language</i>3
	DS elective (optional)(1)

Second Semester

EN 102	<i>Techniques of Reading and Writing</i>3
HS 161	History of Europe3
	<i>Mathematics foundation</i>3
PE 101–199	Physical education elective1
PY 102	<i>General Psychology</i>3
	<i>Foreign language</i>3

Third Semester

PE 101–199	Physical education elective1
SO 101	Introduction to Sociology3
	<i>Arts distribution</i>3
	<i>Natural sciences lab distribution</i>4
	Foreign language3
	Literature elective*3

Fourth Semester

PE 101–199	Physical education elective1
PL 201	Introduction to Philosophy3
	Elective3
	Foreign language3
	Literature elective*3
	<i>Natural sciences non-lab or lab distribution</i>3 (4)

Total credit hours 65 (69)

*Select EN 201, EN 202, EN 211, EN 212, EN 213, or EN 214.

International Studies

Arts and Sciences A.A.

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 and subsequently working 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 History and Political Science Department and identify as early as possible their transfer institution as well as the particular field of 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

AN 101	Introduction to Social and Cultural Anthropology*3
EN 101	Techniques of Reading and Writing3
GE 101	<i>Introduction to Geography</i>3
	<i>Health foundation</i>1
PS 101	<i>American Government</i>3
	Foreign language3

Second Semester

EN 102	<i>Techniques of Reading and Writing</i>	
or		
EN 109	<i>Writing for Technology and Business</i>	3
HS 114	<i>The World in the 20th Century</i>	
or		
HS 116		
or		
HS 117	<i>World History: A Comparative Survey</i>	3
	<i>MA 110 or higher</i>	3
PS 203	<i>International Relations</i>	3
	<i>Foreign language</i>	3

Third Semester

EC 105	<i>Basic Economics</i> [†]	3
EN 201		
or		
EN 202	<i>Introduction to World Literature</i> [‡]	3
PS 201	<i>Comparative Politics and Governments</i>	3
	<i>Arts distribution</i>	3
	<i>Natural sciences lab distribution</i>	4

Fourth Semester

HS 203	<i>Latin American History</i>	
or		
HS 207	<i>East Asian Civilization</i>	
or		
HS 208	<i>Modern Asia</i>	3
PL 201	<i>Introduction to Philosophy</i> **	3
PS 121	<i>Political Ideologies</i>	
or		
PS 250	<i>Introduction to International Conflict Resolution</i>	3
	<i>Speech foundation</i>	3
	<i>Natural sciences non-lab or lab distribution</i>	3(4)

Total credit hours 62(63)

*Alternates: AN 206, EC 103, EC 105, PY 102, SO 101.

†Alternates: AN 206, EC 201, GE 102, GE 103, GE 104, GE 201, PS 121, PY 102, SO 105.

‡Alternates: EN 122, EN 208, EN 215, HS 205, HS 214, third foreign language course.

**Alternates: HS 203, HS 207, HS 208, HS 210, a third or fourth foreign language course.

Science or Mathematics**Arts and Sciences A.A.**

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

First Semester

EN 101	<i>Techniques of Reading and Writing</i>	3
	<i>Health foundation</i>	1 (3)
	<i>Mathematics foundation</i> *	3
PE 101-199	<i>Physical education elective</i>	1
	<i>Foreign language</i> [†]	3
	<i>Natural sciences lab distribution</i>	4
	<i>DS elective (optional)</i>	(1)

Second Semester

EN 102	<i>Techniques of Reading and Writing</i>	3
PE 101-199	<i>Physical education elective</i>	1
	<i>Speech foundation</i>	3
	<i>Foreign language</i> [†]	3
	<i>Mathematics elective</i> *	3 (4)
	<i>Science elective</i> [‡]	4

Third Semester

	<i>Foreign language</i> [†]	3
	<i>Literature elective</i> **	3
	<i>Mathematics or science elective</i> [‡]	4
	<i>Arts distribution</i>	3
	<i>Behavioral and social sciences distribution</i>	3

Fourth Semester

	<i>Foreign language</i> [†]	3
	<i>Literature elective</i> **	3
	<i>Mathematics elective</i>	3 (4)
	<i>Behavioral and social sciences distribution</i>	3
	<i>Natural sciences non-lab or lab distribution</i>	3 (4)

Total credit hours 63 (69)

*For mathematics foundation and mathematics elective, choose from the following sequences: MA 110-113; MA 110-116; MA 181-182; MA 116-160. Students should consult with an adviser and the school(s) to which they plan to transfer to select the appropriate sequence.

†Students should continue with the study of the same foreign language during all four semesters.

‡Students interested in a specific medical science curriculum should consult the listings for pre-dentistry, pre-medical technology, pre-medicine, pre-optometry, and pre-pharmacy.

**Select two courses from EN 201, EN 202, EN 211, EN 212, EN 213, and EN 214.

MANAGEMENT

The management curricula include four tracks leading to the A.A.S. in management (general management, marketing, merchandising, and public management), four certificate curricula (diversity training, general management, human resources management, and marketing), and two letter of recognition curricula (diversity management and supervisory management). Courses are offered to develop specific skills and to serve self-employment objectives. Students may plan a career curriculum emphasizing the practical aspects of management together with social concepts, automated data analyses, and behavioral studies.

Diversity Management Letter of Recognition

This sequence of three courses is designed for persons who wish to develop skills in diversity management. Students must demonstrate skills in the following areas: understanding and managing a diverse population of employees; handling employees of diverse cultures in order to provide a productive workforce; developing policy statements pertaining to diversity in the workplace; developing a training manual to cover workplace diversity issues; relating to men and women in the workplace; and applying the provisions of the Americans with Disabilities Act. A grade of C or better is required in each course.

MG 100	Managing Diversity in the Workplace . . . 3
MG 204	Human Resources Management 3
MG 205	Human Relations in Management 3
Total credit hours 9	

Diversity Training Certificate (G, R)

The diversity training certificate curriculum provides students with the knowledge and techniques for managing a diverse workforce. The curriculum will educate individuals in diversity for positions in business, industry, or government.

EN 101	Techniques of Reading and Writing 3
MG 100	Managing Diversity in the Workplace . . 3
MG 102	Principles of Supervision 3
MG 205	Human Relations in Management 3
MG 210	Field Experience or Practicum 3
SO 101	Introduction to Sociology 3
SO 208	Minorities in American Society 3

Total credit hours 21

General Management

Management A.A.S.

This A.A.S. track prepares students for an understanding of management principles, concepts, and organizational operations.

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

First Semester

	CA elective 3
EN 101	Techniques of Reading and Writing . . . 3
	<i>Health foundation 1 (3)</i>
	<i>Mathematics foundation 3</i>
MG 101	Principles of Management 3
	<i>Arts or humanities distribution 3</i>

Second Semester

EC 201	Principles of Economics I 3
	<i>English foundation 3</i>
MG 102	Principles of Supervision 3
MG 121	Introduction to Marketing 3
	<i>Behavioral and social sciences distribution . . 3</i>

Third Semester

AC 201	Principles of Accounting 4
MG 201	Business Law I 3
MG 205	Human Relations Management 3
	<i>Speech foundation 3</i>

Fourth Semester

MG 202	Business Law II	3
	MG electives*	9
	Natural sciences lab distribution	4

Total credit hours 60 (62)

*BA 210 or MA 116 may also be used as a management elective for this degree.

General Management Certificate

The general management certificate curriculum provides students the opportunity to learn the concepts and principles of management and their applications. The curriculum is designed for students who wish to pursue a general course of studies in management, but who do not intend to complete an associate's degree.

EN 101	Techniques of Reading and Writing	3
MG 101	Principles of Management	3
MG 102	Principles of Supervision	3
MG 121	Introduction to Marketing	3
MG 201	Business Law I	3
MG 204	Human Resources Management	3
MG 205	Human Relations in Management	3
MG 210	Field Experience or Practicum*	3
	MG elective	3

Total credit hours 27

*AC 201 or EN 109 may be substituted with permission of the adviser.

Human Resources Management Certificate (G, R)

This certificate curriculum prepares students to enter the field of human resources management. Content includes understanding concepts relating to organizational development, labor relations, selection, recruitment, compensation, and legal requirements. This certificate can be applied to the general management track for an A.A.S. degree.

EN 101	Techniques of Reading and Writing	3
MA 110	Survey of College Mathematics or higher	3
MG 100	Managing Diversity in the Workplace	3
MG 101	Principles of Management	3
MG 102	Principles of Supervision	3
MG 204	Human Resources Management	3
MG 205	Human Relations in Management	3
MG 207	Legal Issues in Labor Management	3
MG 210	Field Experience or Practicum	3
	MG elective	3

Total credit hours 30**Marketing (R)****Management A.A.S.**

This A.A.S. track is designed to prepare students for careers in entry-level management for retailers, small businesses, or advertisers, and for entry-level marketing positions with manufacturers, wholesalers, service providers, or nonprofit organizations. Marketing personnel are needed for any organization that wants to define and segment a market, develop strategies to satisfy or service the chosen market, or create and manage demand for the product mix or service.

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

First Semester

EN 101	Techniques of Reading and Writing	3
	<i>Health foundation</i>	1 (3)
	<i>Mathematics foundation</i>	3
MG 101	Principles of Management	3
MG 121	Introduction to Marketing	3
	<i>Speech foundation</i>	3

Second Semester

BA 210	Statistics for Business Administration	3
	CA or CS elective	3
EC 201	Principles of Economics I	3
	<i>English foundation</i>	3
MG 106	Principles of Retailing	
or		
MG 110	Small Business Management	3

Marketing (continued)**Third Semester**

AC 201	Principles of Accounting I	4
MG 105	Principles of Selling	3
MG 201	Business Law I	3
MG 206	Principles of Advertising	3
	<i>Behavioral and social sciences distribution</i>	3

Fourth Semester

MG 109	Consumer Behavior	3
MG 210	Field Experience or Practicum	3
	MG elective	3
	<i>Arts or humanities distribution</i>	3
	<i>Natural sciences lab distribution</i>	4
Total credit hours		63 (65)

Marketing Certificate (R)

The marketing certificate curriculum provides students the opportunity to learn the concepts and principles of marketing and their applications. The curriculum is designed for students who wish to pursue a career path specializing in marketing.

EN 101	Techniques of Reading and Writing	3
MG 101	Principles of Management†	3
MG 121	Introduction to Marketing	3
MG 205	Human Relations in Management	3
MG 210	Field Experience or Practicum	3

In addition to the preceding list, select two courses from group A and three courses from group B.

Group A Electives

AC 201	Principles of Accounting I	4
EN 109	Writing for Technology and Business	3
MG 102	Principles of Supervision	3
MG 109	Consumer Behavior	3
MG 201	Business Law I	3
MG 202	Business Law II	3
MG 204	Human Resources Management	3
SP 108	Fundamentals of Speech	3

Group B Electives

MG 105	Principles of Selling	3
MG 106	Principles of Retailing	3
MG 119	Purchasing and Procurement Systems	3
MG 123	Textiles	3
MG 206	Principles of Advertising	3

Total credit hours 30 (31)

†MG 101 is the prerequisite for all management courses.

Merchandising (R)**Management A.A.S.**

This A.A.S. track is designed to prepare the student for an entry-level position with retail management or with a business that interacts with retailers such as distribution sales. Also, this track is for the person who wants to gain knowledge necessary to open his or her own business. A field experience/practicum is an integral part of this program, enabling the student to apply classroom theory and practices.

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

First Semester

EN 101	Techniques of Reading and Writing	3
	<i>Health foundation</i>	1 (3)
MG 101	Principles of Management	3
MG 109	Consumer Behavior	3
MG 121	Introduction to Marketing	3
	<i>Speech foundation</i>	3

Second Semester

	CA or CS elective	3
	<i>English foundation</i>	3
	<i>Mathematics foundation</i>	3
MG 105	Principles of Selling	3
	MG elective*	3

Third Semester

MG 106	Principles of Retailing	3
MG 206	Principles of Advertising	3
	MG elective	3
	<i>Arts or humanities distribution</i>	3
	<i>Natural sciences lab distribution</i>	4

Fourth Semester

AC 201	Principles of Accounting I	4
MG 205	Human Relations in Management	3
MG 210	Field Experience or Practicum	3
	MG elective	3
	<i>Behavioral and social sciences distribution</i>	3

Total credit hours 63 (65)

*It is recommended that students interested in fashion merchandising select MG 123.

Public Management (G, R) Management A.A.S.

This A.A.S. track prepares students for an understanding of governmental operations as well as management principles and concepts. The purpose is to blend the government and management curricula that provide the expertise for application to government operations.

First Semester

EN 101	CA or CS elective	3
	Techniques of Reading and Writing . . .	3
	<i>Health foundation</i>	1 (3)
	<i>Mathematics foundation</i>	3
MG 101	Principles of Management	3
PS 101	<i>American Government</i>	3

Second Semester

BA 210	Statistics for Business Administration	
	or	
MA 116	Elements of Statistics*	3
	<i>English foundation</i>	3
MG 102	Principles of Supervision	3
PS 102	State and Local Government	3
	<i>Speech foundation</i>	3

Third Semester

MG 201	Business Law I	3
MG 204	Human Resources Management	3
MG 205	Human Relations in Management	3
PS 209	Introduction to Public Administration . . .	3
	<i>Arts or humanities distribution</i>	3

Fourth Semester

MG 210	Field Experience or Practicum	3
	MG electives	6
PS 260	Politics in Action	3
	<i>Natural sciences lab distribution</i>	4

Total credit hours 62 (64)

*Students are urged to consult with an adviser for appropriate course selection.

Supervisory Management Letter of Recognition

This sequence of courses is designed for those students who wish to develop skills for employment as a first-line supervisor. Students will gain an understanding of the legal requirements concerning employer/employee relations; application of the legal framework for labor/management relations; and the ramifications of discrimination in employment and its implications in such areas as hiring, firing, and working conditions. A grade of C or better is required for each course.

MG 101	Principles of Management	3
MG 102	Principles of Supervision	3
MG 207	Legal Issues in Labor Management	3

Total credit hours 9

MENTAL HEALTH ASSOCIATE A.A.S. (TP)

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 continued 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.

Mental Health Associate A.A.S. (continued)

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 A.A.S.

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

First Semester

EN 101	Techniques of Reading and Writing	3
HE 100	<i>Principles of Healthier Living</i>	1
MH 101	Introduction to Mental Health I	3
MH 112	Group Dynamics I	3
PY 102	General Psychology	3

Second Semester

	<i>English foundation</i>	3
	<i>Mathematics foundation</i>	3
MH 102	Introduction to Mental Health II	3
MH 213	Group Dynamics II	3
PY 221	Introduction to Abnormal Psychology	3
	Elective	1

Third Semester

MH 200	Practicum, Fieldwork in Mental Health/Human Services	6
MH 208	Activities Therapies	3
	<i>Arts or humanities distribution</i>	3
	<i>Natural sciences lab distribution</i>	4

Fourth Semester

MH 200	Practicum, Fieldwork in Mental Health/Human Services	6
	PY elective	3
	<i>Speech foundation</i>	3
	<i>Behavioral and social sciences distribution</i>	3

Total credit hours 60

MICROCOMPUTER TECHNOLOGIES

Students in the microcomputer technologies curricula may pursue a course of study leading to the A.A.S., a certificate, or a letter of recognition. The associate's degree curriculum is designed to prepare graduates for technical employment in a high-technology area. The certificate curricula are for individuals seeking a career change or desiring to augment their education for career advancement. Students also have the option of transferring to certain four-year institutions that offer bachelor of technology degree programs.

Microcomputer Technologies A.A.S. (G)

This A.A.S track provides entry-level skills in the field of microcomputers, wireless, networks, network cabling, repair and service. Topics include microcomputer architecture, configuration, peripherals, and installation; basic circuit analysis and an introduction to digital circuits; microcomputer troubleshooting and repair; and setting up and troubleshooting computer networks, including wireless.

General Education and Other Requirements (23 credit hours)

EN 101	Techniques of Reading and Writing	3
	<i>English foundation</i>	3
	<i>Health foundation</i>	1
	<i>Mathematics foundation</i>	3
	<i>Speech foundation</i>	3
	<i>Arts or humanities distribution</i>	3
	<i>Behavioral and social sciences distribution</i>	3
	<i>Natural sciences lab distribution</i>	4

Microcomputer Technician Requirements (24 credit hours)

MT 127	Microcomputer Control Programs	3
MT 130	Network Cabling Technology	3
MT 140	Microcomputer Configuration and Installation	3
MT 145	Electronics for Computers	4
MT 146	Digital Logic and Microprocessor Fundamentals	4
MT 264	Microcomputer Systems Troubleshooting and Repair I	4
MT 270	Networks I: Installation, Operation, and Troubleshooting	3

Electives (14–16 credit hours)

CA 172	Internet and Web Literacy	3
MT 220	Solid State Devices	3
MT 229	Communication Systems	3
MT 271	Networks II: Installation, Administration, Troubleshooting, and Support	4
MT 272	Networks III: Advanced Networking Operating Systems	4
MT 274	Introduction to Wireless Technology	4
Total credit hours		61–63

Electronics and Wireless Technology Certificate (G)

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.

MT 145	Electronics for Computers	4
MT 146	Digital Logic and Microprocessor Fundamentals	4
MT 220	Solid State Devices	3
MT 229	Communication Systems	4
MT 270	Networks I: Installation, Operation, Troubleshooting	3
MT 274	Introduction to Wireless Technology	4
Total credit hours		22

Microcomputer Technician Certificate (G)

This certificate curriculum will allow students to enter the computer technician field at a more basic level than that associated with the complete spectrum of courses for the A.A.S. program. It will qualify the student to take the A+ certification examination and will serve as partial preparation for network certification examinations. The student may also elect to apply all of these credits toward completion of the associate's degree.

MT 127	Microcomputer Control Programs	3
MT 140	Microcomputer Configuration and Installation	3
MT 145	Electronics for Computers	4
MT 146	Digital Logic and Microprocessor Fundamentals	4
MT 264	Microcomputer Systems Troubleshooting and Repair I	4
MT 270	Networks I: Installation, Operation, and Troubleshooting	3
Total credit hours		21

A+ Microcomputer Certification Qualification Letter of Recognition (G)

This sequence of courses is designed to develop skills in microcomputer technology that will prepare students to take the A+ certification examination. Students must demonstrate skills in operating systems control programs for microcomputers and the setup, configuration, and operation of microcomputers. A grade of C or better is required in each course.

MT 127	Microcomputer Control Programs	3
MT 140	Microcomputer Configuration and Installation	3
Total credit hours		6

MUSIC

Music (R)

Arts and Sciences A.A.

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 A.A. 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 A.A. 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 MU 005 Applied Music Laboratory.
2. Students receiving the A.A. must perform in a graduation recital.
3. All applied music students must register each semester for MU 161, MU 171, or MU 172, as assigned by the department.

The student normally takes 17–18 semester hours each semester for a total of 69–70 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).

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

	<i>Mathematics foundation</i>	3
MU 005	Applied Music Laboratory	1
MU 106	Class Piano I	2
MU 115	Applied Music	2
<i>MU 123</i>	<i>Music Theory I (arts distribution)</i>	3
MU 124	Ear Training/Sightsinging I	2
	Major ensemble (MU 161, 171, or 172) . . .	1
	<i>Behavioral and social sciences distribution</i> . . .	3

Second Semester

<i>EN 102</i>	<i>Techniques of Reading and Writing*</i>	3
MU 005	Applied Music Laboratory	1
MU 107	Class Piano II	2
MU 116	Applied Music	2
MU 150	Music Theory II	3
MU 151	Ear Training/Sightsinging II	2
	Major ensemble (MU 161, 171, or 172) . . .	1
	<i>Behavioral and social sciences distribution</i> . . .	3

Third Semester

MU 005	Applied Music Laboratory	1
MU 211	Survey of Music Literature I	2
MU 215	Applied Music	2
MU 226	Music Theory III	3
MU 227	Ear Training/Sightsinging III	2
	Major ensemble (MU 161, 171, or 172) . . .	1
	<i>Arts or humanities distribution</i>	3
	<i>Natural sciences lab distribution</i>	4

Fourth Semester

	<i>Health foundation</i>	1
MU 005	Applied Music Laboratory	1
MU 212	Survey of Music Literature II	2
MU 216	Applied Music	2
MU 250	Music Theory IV	3
MU 251	Ear Training/Sightsinging IV	2
	<i>Humanities distribution</i>	3
	<i>Natural sciences non-lab or lab distribution</i>	3 (4)

Total credit hours 69 (70)

*Students should check prerequisites for EN 102.

Music Certificate (R)

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 MU 115, MU 116, MU 215, and MU 216.

Applied Music Laboratory (4 credit hours)

Students will take MU 005 four times.

Large Ensemble (4 credit hours)

Students will take MU 161, MU 171, and/or MU 172.

Music Theory (12 credit hours)

Students will take MU 123, MU 150, MU 226, and MU 250.

Ear Training and Sightsinging (8 credit hours)

Students will take MU 124, MU 151, MU 227, and MU 251.

Total credit hours 36

NETWORK ENGINEERING

Network Engineering A.A.S. (G)

This career curriculum, designed to accommodate both students and the business community, 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, inter-network 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+, Microsoft Certified Professional (MCP), and Microsoft Certified Systems Engineer (MCSE) certification exams. 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.

Completion of the following courses leads to the award of the A.A.S.: 20–22 General Education requirements, 30 or 33 credits of fundamental requirement courses (depending on which track is selected), and 5–12 credits of selected electives, depending on the track.

General Education Requirements (20–22 credit hours)

<i>English foundation</i>	.....3
<i>Health foundation</i>	.....1 (3)
<i>Mathematics foundation</i>	.....3
<i>Speech foundation</i>	.....3
<i>Arts or humanities distribution</i>	.....3
<i>Behavioral and social sciences distribution</i>	.....3
<i>Natural sciences lab distribution</i>	.....4

Fundamental Requirements (30–33 credit hours)

CA 106	Using Microcomputer Operating Systems	
or		
CS 110	Computer Concepts	
or		
	Any NW elective from the list below with program coordinator approval	.3
CS 111	Basic Programming	
or		
CS 140	Introduction to Programming	.....3
CS 136	Systems Analysis and Design	.....3
MT 127	Microcomputer Control Programs	....3
MT 140	Microcomputer Configuration and Installation	.....3
NW 100	Introduction to Networking	.....3

Network Engineering A.A.S. (continued)**MCSE Track 1 (Microsoft Windows NT 4.0)**

NW 102	Administering Microsoft Windows NT	.3
NW 200	Supporting Microsoft Windows NT 4.0 Core Technologies	.3
NW 201	Internetworking Microsoft TCP/IP on Microsoft Windows NT 4.0	.3
NW 202	Supporting Microsoft Windows NT Server 4.0—Enterprise Technologies	.3

MCSE Track 2 (Microsoft Windows 2000+)

NW 103	Microsoft Windows Professional	.3
NW 203	Microsoft Windows Server	.3
NW 204	Supporting Microsoft Windows Network Infrastructure	.3
NW 205	Implementing and Administering Microsoft Windows Directory Services	.3

For Track 2, one of the following courses must be taken in lieu of one elective:

NW 206	Designing a Microsoft Windows Directory Services Infrastructure	
or		
NW 207	Designing Security for a Microsoft Windows Network	
or		
NW 208	Designing a Microsoft Windows Networking Services Infrastructure	.3

Electives (5–12 credit hours, depending on track)

CA 120	Introduction to Computer Applications	.3
CS 2xx	Any 200-level programming language	.3
CS 210	Computer Security	.3
CS 216	UNIX Operating System	.3
MT 271	Networks II: Installation, Administration, Troubleshooting, and Support	.4
NW 152	CISCO Router Configuration and Management I	.3
NW 210	Implementing a Database Design on Microsoft SQL Server 6.5	.3
NW 215	Updating Support Skills from Microsoft Windows NT 4.0 to Microsoft Windows 2000	.3
NW 220	System Administration for Microsoft SQL Server 6.5	.3
NW 221	Novell Network Administration	.3
NW 230	Creating and Configuring a Web Server Using Microsoft Tools for Microsoft Internet Information Server 4.0	.3
NW 240	Microsoft Exchange Server—Concepts and Administration	.3
NW 241	Microsoft Exchange Server—Design and Implementation	.3

Electives available only for MCSE Track 2; any of the following courses previously taken as a Track 2 requirement may not also be applied as an elective:

NW 206	Designing a Microsoft Windows Directory Services Infrastructure	.3
NW 207	Designing Security for a Microsoft Windows Network	.3
NW 208	Designing a Microsoft Windows Networking Services Infrastructure	.3
Total credit hours 60 (62)		

Network Administration Certificate (G)

This certificate curriculum helps prepare students for the CompTIA A+, CompTIA Network+, and Microsoft Certified Professional (MCP) exams. Depending on which electives are taken, it will also help prepare students for the Certified Novell Administrator (CNE), CISCO Certified Network Associate (CCNA), and Microsoft Certified Systems Engineer (MCSE) exams.

Fundamental Requirements (15 credit hours)

NW 100	Introduction to Networking	.3
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MCP Track 1 (Microsoft Windows NT 4.0)

NW 102	Administering Microsoft Windows NT	.3
NW 200	Supporting Microsoft Windows NT 4.0 Core Technologies	.3
NW 201	Internetworking Microsoft TCP/IP on Microsoft Windows NT 4.0	.3
NW 202	Supporting Microsoft Windows NT Server 4.0—Enterprise Technologies	.3

MCP Track 2 (Microsoft Windows 2000+)

NW 103	Microsoft Windows Professional	.3
NW 203	Microsoft Windows Server	.3
NW 204	Supporting Microsoft Windows Network Infrastructure	.3
NW 205	Implementing and Administering Microsoft Windows Directory Services	.3

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

Electives (6–8 credit hours)

Select courses from the following list. At least one course must be a 200-level NW course.

CS 216	UNIX Operating System	3
MT 271	Networks II: Installation, Administration, Troubleshooting, and Support	4
NW 152	CISCO Router Configuration and Management I	3
NW 210	Implementing a Database Design on Microsoft SQL Server 6.5	3
NW 215	Updating Support Skills from Microsoft Windows NT 4.0 to Microsoft Windows 2000	3
NW 220	System Administration for Microsoft SQL Server 6.5	3
NW 221	Novell Network Administration	3
NW 230	Creating and Configuring a Web Server Using Microsoft Tools for Microsoft Internet Information Server 4.0	3
NW 240	Microsoft Exchange Server—Concepts and Administration	3
NW 241	Microsoft Exchange Server—Design and Implementation	3
<i>Electives available only for MCP Track 2:</i>		
NW 206	Designing a Microsoft Windows Directory Services Infrastructure	3
NW 207	Designing Security for a Microsoft Windows Network	3
NW 208	Designing a Microsoft Windows Networking Services Infrastructure	3

Total credit hours 21(23)

Network Engineer Certificate (G)

This certificate curriculum helps prepare students for the CompTIA A+, CompTIA Network+, Microsoft Certified Professional (MCP), and Microsoft Certified Systems Engineer (MCSE) certification exams. 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.

Fundamental Requirements (30–33 credit hours)

CA 106	Using Microcomputer Operating Systems	
or		
CS 110	Computer Concepts	
or		
	Any NW elective from the list below with program coordinator approval	.3
CS 111	Basic Programming	
or		
CS 140	Introduction to Programming	3
CS 136	Systems Analysis and Design	3
MT 127	Microcomputer Control Programs	3
MT 140	Microcomputer Configuration and Installation	3
NW 100	Introduction to Networking	3

MCSE Track 1 (Microsoft Windows NT 4.0)

NW 102	Administering Microsoft Windows NT	.3
NW 200	Supporting Microsoft Windows NT 4.0 Core Technologies	3
NW 201	Internetworking Microsoft TCP/IP on Microsoft Windows NT 4.0	3
NW 202	Supporting Microsoft Windows NT Server 4.0—Enterprise Technologies	.3

MCSE Track 2 (Microsoft Windows 2000+)

NW 103	Microsoft Windows Professional	3
NW 203	Microsoft Windows Server	3
NW 204	Supporting Microsoft Windows Network Infrastructure	3
NW 205	Implementing and Administering Microsoft Windows Directory Services	3

For Track 2, one of the following courses must be taken in lieu of one elective:

NW 206	Designing a Microsoft Windows Directory Services Infrastructure	
or		
NW 207	Designing Security for a Microsoft Windows Network	
or		
NW 208	Designing a Microsoft Windows Networking Services Infrastructure	3

Network Engineer Certificate (continued)**Electives (3-8 credit hours)**

For Track 1, select one course from each category.

Electives I

NW 210	Implementing a Database Design on Microsoft SQL Server 6.5	3
NW 220	System Administration for Microsoft SQL Server 6.5	3
NW 230	Creating and Configuring a Web Server Using Microsoft Tools for Microsoft Internet Information Server 4.0	3
NW 240	Microsoft Exchange Server—Concepts and Administration	3
NW 241	Microsoft Exchange Server—Design and Implementation	3

Electives II

CA 120	Introduction to Computer Applications . . .	3
CS 2xx	Any 200-level programming language . . .	3
CS 210	Computer Security	3
CS 216	UNIX Operating System	3
MT 271	Networks II: Installation, Administration, Troubleshooting, and Support	4
NW 152	CISCO Router Configuration and Management I	3
NW 215	Updating Support Skills from Microsoft Windows NT 4.0 to Microsoft Windows 2000	3
NW 221	Novell Network Administration	3

Electives available only for MCSE Track 2; any of the following courses previously taken as a Track 2 requirement may not also be applied as an elective:

NW 206	Designing a Microsoft Windows Directory Services Infrastructure	3
NW 207	Designing Security For Microsoft Windows Network	3
NW 208	Designing a Microsoft Windows Networking Services Infrastructure . . .	3

Total credit hours 36(38)

NURSING A.S. (TP)

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 A.S. 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, BI 203, BI 204, and BI 205, and each nursing course in order to continue in the program.

The nursing curriculum is dependent 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 September 1 for spring semester. For additional information, contact the Admissions Office at the Takoma Park Campus, 301-650-1501, 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.

First Semester

BI 204	<i>Human Anatomy and Physiology I*</i>	4
NU 105	Nursing Perspectives I	1
NU 110	Foundational Concepts in Nursing*†	8
NU 121	Basic Health Assessment	2
PY 102	<i>General Psychology</i>	3

Second Semester

BI 205	<i>Human Anatomy and Physiology II</i>	4
	<i>Mathematics foundation</i>	3
NU 123	Nursing in Health and Illness I	4
NU 124	Nursing in Mental Health and Illness	4
PY 203	Human Growth and Development during the Life Span	3

Third Semester

BI 203	<i>Microbiology*</i>	4
EN 102	<i>Techniques of Reading and Writing*</i>	3
NU 230	Nursing in Health and Illness II	8
	<i>Arts distribution</i>	3

Fourth Semester

NU 205	Nursing Perspectives II	1
NU 233	Nursing Management in Health and Illness	4
NU 234	Nursing in Family, Newborn, and Women's Health	4
SO 101	<i>Introduction to Sociology</i>	3
	<i>Humanities distribution</i>	3

Total credit hours 69

*Students should check prerequisites for BI 204, BI 203, EN 102, and NU 110.

†Challenge options are available in NU 110. For further information call the Nursing Office or nursing adviser.

PARALEGAL STUDIES**Paralegal Studies A.A.S. (G, TP)**

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 attorneys' offices who wish to improve their skills for career advancement.

A legal assistant is a trained specialist who can manage a law office operation, relieving a practicing attorney of those routine sections of 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 A.A.S. in paralegal studies.

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

First Semester

BA 101	Introduction to Business	3
CA 100	Keyboarding Fundamentals	
	or	
CA 131	Introduction to Word Processing Applications	1 (3)
EN 101	Techniques of Reading and Writing	3
HE 100	<i>Principles of Healthier Living</i>	1
LA 101	Introduction to the Legal System	3
	<i>Speech foundation</i>	3

Second Semester

CA 120	Introduction to Computer Applications	3
	<i>English foundation</i>	3
LA 102	Legal Research	3
	LA elective	3
PS 101	American Government	3
	<i>Behavioral and social sciences distribution</i>	3

Third Semester

LA 103	Legal Writing	3
LA 118	Civil Litigation	3
	LA elective	3
	<i>Mathematics foundation</i>	3
	<i>Natural sciences lab distribution</i>	4

Fourth Semester

LA 104	Interpersonal Communications, Legal Interviewing, and Investigation Techniques	3
LA 116	Real Property	3
LA 120	Drafting Wills and Probating Estates in Maryland	3
	LA elective or CJ 221	3
	<i>Arts or humanities distribution</i>	3

Total credit hours 63 (65)

Paralegal Studies Certificate (G, TP)

Developed in cooperation with members of the Montgomery County Bar Association, this evening curriculum is designed primarily for persons wishing to enter the paralegal field. The curriculum provides the graduate with basic skills in legal research, legal writing, interpersonal communication skills, and legal interviewing and investigating techniques. Competency is developed in at least two areas of substantive law selected by the student. Instruction is offered in law office administration. The legal system, the role of the paralegal in the delivery of legal services, legal ethics, authorized practice, and the code of professional responsibility are studied.

Required Courses

EN 101	Techniques of Reading and Writing	3
LA 101	Introduction to the Legal System	3
LA 102	Legal Research	3
LA 103	Legal Writing*	3
LA 104	Interpersonal Communications, Legal Interviewing, and Investigating Techniques	3

Electives (Select three)[†]

CJ 221	Criminal Law	3
LA 110	Maryland Contract Law	3
LA 114	Domestic Relations	3
LA 116	Real Property	3
LA 118	Civil Litigation	3
LA 120	Drafting Wills and Probating Estates in Maryland	3
LA 122	Law Office Administration	3
LA 125	Introduction to Corporate Law and Practice	3
LA 210	Torts	3

Total credit hours 24

*A keyboarding skill of 35 wpm is required before enrolling in this course.

[†]Students may elect CJ 221 or any paralegal course above LA 104.

Note: This is a curriculum designed for working people who may take only one or two courses per semester; thus, it may take several semesters to complete.

Legal Analysis Letter of Recognition (G, TP)

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.

LA 101	Introduction to the Legal System	3
LA 102	Legal Research	3
LA 103	Legal Writing	3
		Total credit hours 9

PHOTOGRAPHY

Photography A.A.S. (R)

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 A.A.S. in photography.

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

First Semester

EN 101	Techniques of Reading and Writing	3
	<i>Health foundation</i>	<i>1</i>
PG 150	Photography I	3
TR 104	Media Appreciation	3
	<i>Natural sciences lab distribution</i>	<i>4</i>

Second Semester

	AR elective	3
	<i>English foundation</i>	<i>3</i>
	<i>Mathematics foundation</i>	<i>3</i>
PG 201	Photography II	4
	PG elective*	3

Third Semester

PG 165	Electronic Photography I	4
PG 260	Black-and-White Materials and Processes	3
	PG elective*	3
	<i>Speech foundation</i>	3
	<i>Behavioral and social sciences distribution</i>	3

Fourth Semester

	AA, AR, or PG elective*	3
PG 265	Color Materials and Processes	3
PG 275	Business Practices and Portfolio Development	3
	PG elective*	3
	Elective	3

Total credit hours 61**Choice of electives must be approved by a photography adviser.***Electronic Photography Certificate (R)**

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.

PG 150	Photography I	3
PG 165	Electronic Photography I	4
PG 201	Photography II	4
PG 220	Electronic Photography II	4

Total credit hours 15**Photographic Techniques Certificate (R)**

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.

PG 150	Photography I	3
PG 201	Photography II	4
PG 260	Black-and-White Materials and Processes	3
PG 265	Color Materials and Processes	3

Total credit hours 13*Refer to Course Descriptions section to identify courses with prerequisites. Courses in italics meet General Education requirements.***Photography Master Certificate (R)**

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.

PG 150	Photography I	3
PG 165	Electronic Photography I	4
PG 201	Photography II	4
PG 260	Black-and-White Materials and Processes	3
PG 265	Color Materials and Processes	3
PG 275	Business Practices and Portfolio Development	3
	PG electives*	9
	Elective selected from advertising art, art, computer applications, computer graphics, physics, printing, or television/radio disciplines*	3

Total credit hours 32**Choice of electives must be approved by a photography adviser.***Portrait, Fashion, and Photojournalism Certificate (R)**

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.

PG 150	Photography I	3
PG 201	Photography II	4
PG 210	Photojournalism	3
PG 251	Portrait and Fashion Photography	3

Total credit hours 13

Studio and Location Photography Certificate (R)

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 techniques in studio and location photography in the commercial and illustration fields of professional photography.

PG 150	Photography I	.....3
PG 201	Photography II	.....4
PG 251	Portrait and Fashion Photography	....3
PG 255	View Camera	.....3
Total credit hours		13

PHYSICAL EDUCATION

See Health Enhancement, Exercise Science, and Physical Education

PHYSICAL THERAPIST ASSISTANT A.A.S. (TP)

The program provides a foundation for graduates to become highly skilled in providing patient services using physical therapy techniques under the supervision of a 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 Admissions Office at the Takoma Park Campus, 301-650-1501, or the program department.

Thirty to forty hours of volunteer experience in a physical therapy setting and completion of BI 204 are highly recommended before entering the program. It is advised that students not hold jobs during enrollment in the program because physical therapist assistant classes and lab sessions are scheduled days and evenings, and students are required to attend full-time or part-time clinical practicum experiences.

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 A.A.S. 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.

First Semester

BI 204	<i>Human Anatomy and Physiology I*</i>4
EN 101	Techniques of Reading and Writing	....3
HE 107	<i>First Aid and Safety in the Home, School, and Community</i>	.....2
PT 101	Introduction to Physical Therapy	.....1
PT 102	Basic Health Skills for the Physical Therapist Assistant	.....2
PT 103	Therapeutic Procedures I	.....2
PY 102	<i>General Psychology</i>	.....3

Second Semester

BI 205	Human Anatomy and Physiology II	....4
EN 102	<i>Techniques of Reading and Writing</i>	
	<i>or</i>	
EN 109	<i>Writing for Technology and Business</i>	....3
PT 105	Kinesiology	.....3
PT 110	Therapeutic Procedures II	.....2
PT 111	Clinical Practicum I	.....3
PT 112	Pathology for the Physical Therapist Assistant	.....2

Summer Semester

<i>Mathematics foundation</i>	.....3
<i>Arts or humanities distribution</i>	.....3

Third Semester

PT 201	Medical Reporting for the Physical Therapist Assistant	.....3
PT 208	Therapeutic Procedures III	.....2
PT 209	Clinical Practicum II	.....3
PT 212	Psychological Aspects of Therapy for the Physical Therapist Assistant	....3
PY 203	Human Growth and Development during the Lifespan	.....3
	<i>Speech foundation</i>	.....3

Fourth Semester

PT 211	Rehabilitation Procedures	5
PT 213	Therapeutic Procedures IV	2
PT 214	Clinical Practicum III	5

Total credit hours 69

*Students are encouraged to complete BI 204 prior to enrolling in PT courses; note that BI 204 has a prerequisite.

PRE-DENTISTRY

Arts and Sciences A.A.

The pre-dentistry student is advised to study a copy of *Admissions Requirements of U.S. and Canadian Dental Schools*, which can be ordered through the American Association of Dental Schools, 1625 Massachusetts Avenue, N.W., Washington, DC 20036. Completion of all requirements for this track will lead to the award of the A.A. in arts and sciences.

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

First Semester

BI 107	<i>Principles of Biology</i>	4
CH 101	<i>Principles of Chemistry I</i>	4
EN 101	Techniques of Reading and Writing	3
	<i>Health foundation</i>	1
MA 180	<i>Precalculus*</i>	4

Second Semester

BI 108	Principles of Biology	4
CH 102	Principles of Chemistry II	4
EN 102	Techniques of Reading and Writing	3
SP 108	Fundamentals of Speech	3
	<i>Arts or humanities distribution</i> [†]	3

Third Semester

CH 203	Organic Chemistry I	5
PH 203	General Physics I	4
	<i>Arts distribution</i>	3
	<i>Behavioral and social sciences distribution</i>	3
	<i>Humanities distribution</i> [†]	3

Fourth Semester

BI 203	Microbiology	
or		
BI 209	General Genetics	
or		
MA 160	Elementary Applied Calculus I or equivalent*	4
CH 204	Organic Chemistry II	5
PE 101-199	Physical education elective	1
PH 204	General Physics II	4
	<i>Behavioral and social sciences distribution</i>	3

Total credit hours 68

*Acceptable alternative sequences are MA 110-113 or MA 181-182. Mathematics requirements vary widely depending on dental school. Consult with an adviser or with the transfer institution or dental school.

[†]Select foreign language when required by the transfer institution.

PRE-MEDICAL TECHNOLOGY

Arts and Sciences A.A.

This track provides the first two years of the four-year program necessary to become a registered medical technologist.

The curriculum meets the requirements of the medical technology degree curriculum offered by many four-year institutions. These colleges and universities have designed a curriculum that awards a bachelor of science degree to the student who successfully completes the third year at the university and the fourth year at an affiliated AMA-approved hospital school of medical technology. Graduates of the bachelor of science program are then eligible to take the National Registry Examination offered by the American Society of Clinical Pathologists for medical technology certification.

Job opportunities exist for registered medical technologists as specialists and supervisors in clinical laboratories located in hospitals, public health facilities, research institutions, industrial organizations, and volunteer health programs.

Pre-medical technology students are advised to check the requirements of the institution to which they wish to transfer. Completion of all requirements for this track will lead to the award of the A.A. in arts and sciences.

Pre-Medical Technology (*continued*)

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

First Semester

BI 107	<i>Principles of Biology I</i>	4
CH 101	<i>Principles of Chemistry I</i>	4
EN 101	Techniques of Reading and Writing . . .	3
MA 110	<i>Survey of College Mathematics*</i>	3
PE 101–199	Physical education elective	1

Second Semester

BI 203	Microbiology	4
CH 102	Principles of Chemistry II	4
EN 102	<i>Techniques of Reading and Writing</i>	3
	<i>Health foundation</i>	1
MA 113	Introduction to Probability	3
	<i>Arts distribution</i>	3

Third Semester

	BI elective*	4
	CH elective*	4 (5)
SP 108	<i>Fundamentals of Speech</i>	3
	<i>Arts or humanities distribution</i>	3
	<i>Behavioral and social sciences distribution</i> . . .	3

Fourth Semester

	BI elective*	4
	CH elective*	5
	<i>Behavioral and social sciences</i> <i>distribution</i>	3
	<i>Humanities distribution</i>	3

Total credit hours 65 (66)

**Biology, chemistry, and mathematics courses must be selected in consultation with the adviser. Alternative mathematics course sequences are MA 110–116 or MA 180–160. Suggested biology electives are anatomy and physiology and genetics. Suggested chemistry electives are organic chemistry and analytical chemistry. Required courses vary greatly with transfer institutions.*

Note: Some transfer institutions require two years of a foreign language to be completed by the end of the junior year.

PRE-MEDICINE**Arts and Sciences A.A.**

Students who plan to transfer in pre-medicine or to a baccalaureate degree program in nursing are advised to check the requirements of the institution to which they plan to transfer. Basic

transfer information may be obtained from the Association of American Medical Colleges, 2450 N Street, N.W., Washington, DC 20037, or from the prospective school. Completion of all requirements for this track will lead to the award of the A.A. in arts and sciences.

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

First Semester

BI 107	<i>Principles of Biology</i>	4
CH 101	<i>Principles of Chemistry I</i>	4
EN 101	Techniques of Reading and Writing . . .	3
	<i>Health foundation</i>	1
MA 180	<i>Precalculus*</i>	4

Second Semester

BI 108	Principles of Biology	4
CH 102	Principles of Chemistry II	4
EN 102	<i>Techniques of Reading and Writing</i>	3
SP 108	<i>Fundamentals of Speech</i>	3
	<i>Arts or humanities distribution</i> [†]	3

Third Semester

CH 203	Organic Chemistry I	5
PH 203	General Physics I	4
	<i>Arts distribution</i>	3
	<i>Behavioral and social sciences distribution</i> . . .	3
	<i>Humanities distribution</i> [†]	3

Fourth Semester

BI 203	Microbiology	
or		
BI 209	General Genetics	
or		
MA 160	Elementary Applied Calculus I or equivalent*	4
CH 204	Organic Chemistry II	5
PE 101–199	Physical education elective	1
PH 204	General Physics II	4
	<i>Behavioral and social sciences</i> <i>distribution</i>	3

Total credit hours 68

*Acceptable alternative sequences of mathematics courses are MA 110–113 or MA 181–182. Mathematics requirements vary widely depending on medical school. Consult with an adviser or with the transfer institution or medical school.

[†]Select foreign language when required by the transfer institution.

PRE-OPTOMETRY

Arts and Sciences A.A.

This track provides the basic professional requirements for transfer to a school of optometry. All 12 accredited schools and colleges of optometry in the United States require a six-year curriculum leading to a doctor of optometry degree. This includes four years of professional school and a minimum of two years of pre-optometry studies. Prospective optometry students are advised to check the requirements of the institution to which they intend to transfer. Completion of all requirements for this track will lead to the award of the A.A. in arts and sciences.

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

First Semester

BI	107	<i>Principles of Biology</i>	4
CH	101	<i>Principles of Chemistry I</i>	4
EN	101	Techniques of Reading and Writing	3
		<i>Health foundation</i>	1
		<i>Mathematics foundation*</i>	3 (4)

Second Semester

		BI elective [†]	4
		CH elective [‡]	4
EN	102	<i>Techniques of Reading and Writing</i>	3
		MA elective*	3 (4)
PE	101-199	Physical education elective	1

Third Semester

PE	101-199	Physical education elective	1
PH	203	General Physics I	4
PY	102	<i>General Psychology</i>	3
SP	108	<i>Fundamentals of Speech</i>	3
		<i>Humanities distribution</i>	3

Fourth Semester

PE	101-199	Physical education elective	1
PH	204	General Physics II	4
		<i>Arts distribution</i>	3
		<i>Arts or humanities distribution</i>	3
		<i>Behavioral and social sciences distribution</i>	3
		Elective	3 (4)

Total credit hours 61 (64)

*Recommended mathematics sequences are MA 110-180 or MA 180-160. Some optometry schools require calculus. Consult with an adviser and with the optometry school.

[†]BI 108 or BI 203 is suggested. Some optometry schools require two semesters of general biology or zoology, and some schools require microbiology or comparative anatomy as well. Consult with an adviser and with the optometry school.

[‡]CH 102 or CH 120 is suggested. Some optometry schools require two semesters of general chemistry and one semester of organic chemistry. Consult with an adviser and with the optometry school.

Note: Some transfer institutions require two years of a foreign language to be completed by the end of the junior year.

PRE-PHARMACY

Arts and Sciences A.A.

This track conforms with the five-year program approved by the American Council on Pharmaceutical Education. Students are advised to check the requirements of the institution to which they intend to transfer. Completion of all requirements for this track will lead to the award of the A.A. in arts and sciences.

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

First Semester

BI	107	<i>Principles of Biology</i>	4
CH	101	<i>Principles of Chemistry I</i>	4
EN	101	Techniques of Reading and Writing	3
MA	180	<i>Precalculus*</i>	
		or	
MA	181	<i>Calculus I*</i>	4
PE	101-199	Physical education elective	1

Pre-Pharmacy (continued)**Second Semester**

BI 108	Principles of Biology	.....4
CH 102	Principles of Chemistry II	.....4
EN 102	<i>Techniques of Reading and Writing</i>	.....3
MA 181	Calculus I	
	or	
MA 182	Calculus II	.....4
SP 108	<i>Fundamentals of Speech</i>	.....3

Third Semester

CH 203	<i>Organic Chemistry I</i>	.....5
EC 201	<i>Principles of Economics I</i>	
	or	
EC 202	<i>Principles of Economics II</i>	.....3
	<i>Health foundation</i>	.....1
PH 203	General Physics I	.....4
	<i>Humanities distribution</i>	.....3

Fourth Semester

CH 204	Organic Chemistry II	.....5
PH 204	General Physics II	.....4
	<i>Arts distribution</i>	.....3
	<i>Arts or humanities distribution</i>	.....3
	<i>Behavioral and social sciences distribution</i>	.....3

Total credit hours 68

*Acceptable alternative sequences of mathematics courses are MA 110–113 or MA 181–182. Mathematics requirements vary widely depending on pharmacy school. Consult with an adviser or with the pharmacy school.

PRINTING MANAGEMENT—

See *Computer Publishing and Printing Management*

RADIOLOGIC (X-RAY) TECHNOLOGY A.A.S. (TP)

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, which is

supported by extensive clinical experience. The program is accredited by the Joint Review Committee on Education in Radiologic Technology. Upon successful completion of the program, the graduate will receive the A.A.S. 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 A.A.S.

Each of the radiologic technology courses builds upon material offered in the previous course. Students must meet prerequisites to first semester courses. A grade of C or better in each radiologic technology course must be achieved.

This is a selective program with specific admissions requirements. For additional information, contact the Admissions Office at the Takoma Park Campus, 301-650-1501, or the program department.

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

First Semester

BI 204	<i>Human Anatomy and Physiology I*</i>4
RT 101	Radiologic Technology I	.....4
RT 111	Radiographic Positioning I	.....2
RT 121	Clinical Radiology I	.....3
	<i>Mathematics foundation</i>	.....3

Second Semester

BI 205	<i>Human Anatomy and Physiology II</i>	.....4
HI 125	Medical Terminology I	.....2
RT 102	Radiologic Technology II	.....4
RT 112	Radiographic Positioning II	.....2
RT 122	Clinical Radiology II3

Summer Session

RT 123	Clinical Radiology III	4
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Third Semester

EN 101	Techniques of Reading and Writing	3
<i>PY 102</i>	<i>General Psychology</i>	<i>3</i>
RT 201	Radiologic Technology III	3
RT 211	Radiographic Positioning III	2
RT 221	Clinical Radiology IV	3

Fourth Semester

CA 120	Introduction to Computer Applications	3
EN 102	<i>Techniques of Reading and Writing</i>	
or		
EN 109	<i>Writing for Technology and Business</i>	<i>3</i>
RT 202	Radiologic Technology IV	3
RT 222	Clinical Radiology V	3
	<i>Speech foundation</i>	<i>3</i>

Summer Session

RT 223	Clinical Radiology VI	3
RT 240	Radiologic Technology V	2

Total credit hours 69

* Students should check the prerequisites for this course.

SCIENCE A.S.

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. Four tracks are available in the curriculum: chemistry and biochemistry, life science, mathematics, and physics. Within each track, completion of all requirements for this curriculum will lead to the award of the A.S. 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 Science A.S.

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.

General Education Requirements (31 credit hours)

CH 101-102	<i>Principles of Chemistry I and II</i>	<i>8</i>
	<i>English foundation</i>	<i>3</i>
	<i>Health foundation</i>	<i>1</i>
MA 181	Calculus	4
	<i>Speech foundation</i>	<i>3</i>
	<i>Arts distribution</i>	<i>3</i>
	<i>Behavioral and social sciences distribution</i>	<i>6</i>
	<i>Humanities distribution</i>	<i>3</i>

Track Requirements (25 credit hours)

BI 107	Principles of Biology I	4
CH 203-204	Organic Chemistry I and II	10
MA 182	Calculus II	4
PH 161, 162	General Physics I and II	7

Track Electives (Select at least 4 credit hours)

Any computer science, mathematics, or physical/natural science course. If a 3-credit course is chosen, then a second general elective ranging from 1 to 4 credits must also be selected

Total credit hours 60–63**Life Science Science A.S.**

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

Life Science (continued)

necessary prerequisite courses needed by these professional schools for admission. 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.

General Education Requirements (31 credit hours)

BI 107	<i>Principles of Biology</i>	4
CH 101	<i>Principles of Chemistry I</i>	4
	<i>English foundation</i>	3
	<i>Health foundation</i>	1
MA 180	<i>Precalculus</i>	
or		
MA 181	<i>Calculus</i>	4
	<i>Speech foundation</i>	4
	<i>Arts distribution</i>	3
	<i>Behavioral and social sciences distribution</i> ..	6
	<i>Humanities distribution</i>	3

Track Electives (Select at least 29 credit hours)

BI 108	<i>Principles of Biology II</i>	4
BI 203	<i>Microbiology</i>	4
BI 209	<i>General Genetics</i>	4
CH 102	<i>Principles of Chemistry II</i>	4
CH 203	<i>Organic Chemistry I</i>	5
CH 204	<i>Organic Chemistry II</i>	5
EN 101	<i>Techniques of Reading and Writing</i> ...	3
MA 181	<i>Calculus I</i>	4
MA 182	<i>Calculus II</i>	4
PH 203	<i>General Physics I (non-engineering)</i>	
or		
PH 161	<i>General Physics I</i>	3(4)
PH 204	<i>General Physics II (non-engineering)</i>	
or		
PH 262	<i>General Physics II</i>	4

Total credit hours 60–65**Mathematics****Science A.S.**

The mathematics track is a transfer program that provides the first two years of courses necessary for a four-year baccalaureate degree in mathematics.

General Education Requirements (31 credit hours)

	<i>English foundation</i>	3
	<i>Health foundation</i>	1
MA 181	<i>Calculus</i>	4
PH 262-263	<i>General Physics II and III</i>	
or		
CH 101-102	<i>Principles of Chemistry I and II</i>	8
	<i>Speech foundation</i>	3
	<i>Arts distribution</i>	3
	<i>Behavioral and social sciences distribution</i> ..	6
	<i>Humanities distribution</i>	3

Track Requirements (18 [20] credit hours)

MA 182	<i>Calculus II</i>	4
MA 280	<i>Multivariable Calculus</i>	4
MA 282	<i>Differential Equations</i>	3
MA 284	<i>Linear Algebra</i>	4
PH 161	<i>General Physics I</i>	
or		
CH 203	<i>Organic Chemistry</i>	3(5)

Track Electives* (Select at least 11 [9] credit hours)

CH 101	<i>Principles of Chemistry I</i>	4
CH 102	<i>Principles of Chemistry II</i>	4
CH 203	<i>Organic Chemistry I</i>	5
CH 204	<i>Organic Chemistry II</i>	5
CS 225	<i>C Programming Language</i>	
or		
CS 226	<i>Introduction to Object-Oriented Programming Using C++</i>	
or		
EE 114	<i>Programming Concepts for Engineering</i>	3(4)
EN 101	<i>Techniques of Reading and Writing</i> ...	3
ES 102	<i>Statics</i>	3
ES 220	<i>Mechanics of Materials</i>	3
ES 221	<i>Dynamics</i>	3
ES 240	<i>Scientific and Engineering Computation</i>	3
PH 161	<i>General Physics I</i>	3
PH 262	<i>General Physics II</i>	4
PH 263	<i>General Physics III</i>	4

Total credit hours 60–65

*Students may select courses not on this list with approval from an adviser.

Physics

Science A.S.

The physics track is a transfer program that provides the first two years of courses necessary for a four-year baccalaureate degree in physics.

General Education Requirements (31 credit hours)

	<i>English foundation</i> .....	.3
	<i>Health foundation</i> .....	.1
MA 181	<i>Calculus</i> .....	.4
PH 262-263	<i>General Physics II and III</i> .....	.8
	<i>Speech foundation</i> .....	.3
	<i>Arts distribution</i> .....	.3
	<i>Behavioral and social sciences distribution</i> ..	.6
	<i>Humanities distribution</i> .....	.3

Track Requirements (26 credit hours)

CH 101-102	Principles of Chemistry I and II .....	.8
MA 182	Calculus II .....	.4
MA 280	Multivariable Calculus .....	.4
MA 282	Differential Equations .....	.3
MA 284	Linear Algebra .....	.4
PH 161	General Physics I .....	.3

Track Elective (Select one)

CS 225	C Programming Language .....	.3
CS 226	Introduction to Object-Oriented Programming Using C++ .....	.3
EE 114	Programming Concepts for Engineering .....	.4
EN 101	Techniques of Reading and Writing ...	.3
ES 240	Scientific and Engineering Computation 3	

Total credit hours 60(61)

SURGICAL TECHNOLOGY

Surgical Technology A.A.S. (TP)

This curriculum requires a minimum of two years of didactic and clinical experience. It offers a basic general education as well as a broad knowledge base of surgical skills to perform as an integral member 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 A.A.S. and will be eligible to apply to take the certification examination given by the Association of

Surgical Technologists. Surgical technologists are eligible for employment in hospitals, operating rooms, physicians' offices, surgery centers, labor and delivery, and freestanding minor surgery facilities. The curriculum has been designed to provide a transfer option for students who elect to continue studies beyond the A.A.S.

Each of the surgical technologist courses builds upon materials offered in the previous course. Students must meet prerequisites to first semester courses. A grade of C or better in each surgical technologist course must be achieved.

Admission to the program is selective. For information regarding the program and admissions, please call the Office of Admissions, Records, and Registration at the Tacoma Park Campus at 301-650-1501.

Summer Session

EN 101	Techniques of Reading and Writing ...	.3
	<i>Mathematics foundation</i> .....	.3

First Semester

BI 204	<i>Human Anatomy and Physiology I*</i>4
HI 125	Medical Terminology I .....	.2
HI 126	Medical Terminology II .....	.2
SG 101	Surgical Technologist I .....	.6

Second Semester

BI 205	<i>Human Anatomy and Physiology II</i> .....	.4
SG 102	Surgical Technologist II .....	.6
SG 132	Fundamentals of Pharmacology .....	.3

Summer Session

BI 203	Microbiology .....	.4
EN 102	<i>Techniques of Reading and Writing</i>	
	<i>or</i>	
EN 109	<i>Writing for Technology and Business</i> .....	.3

Third Semester

PY 102	<i>General Psychology I</i> .....	.3
SG 201	Surgical Technologist III .....	.6
SG 202	Clinical Practicum I .....	.3
	<i>Speech foundation</i> .....	.3

Fourth Semester

SG 211	Surgical Technologist IV .....	.6
SG 212	Clinical Practicum II .....	.3
	<i>Arts or humanities distribution</i> .....	.3

Total credit hours 67

*Students should check the prerequisite for BI 204.

Surgical Technology Certificate (TP)

This certificate curriculum is intended for licensed/certified health care professionals, graduates of accredited programs or those who are registry eligible who want to move into surgical technology careers or who wish to upgrade their skills. 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 earn a certificate and be eligible for employment in hospitals, operating rooms, physicians' offices, surgery centers, labor and delivery, and free-standing minor surgery facilities. The curriculum provides transfer options for students who choose to continue studies toward the A.A.S. and beyond.

Each of the surgical technologist courses builds upon materials offered in the previous course. A grade of C or better in each surgical technologist course must be achieved.

For information regarding the program and admissions, please call the Office of Admissions, Records, and Registration at the Takoma Park Campus at 301-650-1501.

BI	204	Human Anatomy and Physiology I	4
BI	205	Human Anatomy and Physiology II	4
SG	101	Surgical Technologist I	6
SG	102	Surgical Technologist II	6
SG	132	Fundamentals of Pharmacology	3
SG	201	Surgical Technologist III	6
SG	202	Clinical Practicum I	3
SG	211	Surgical Technologist IV	6
SG	221	Clinical Practicum II	3

Total credit hours 41

TECHNICAL WRITING CERTIFICATE (G)

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.

CA	161	Desktop Publishing I	
	or		
CG	120	Computer Graphics: Art and Illustration I	4
CA	172	Internet and Web Literacy	
	or		
		CA or CS elective	3
EN	101	Techniques of Reading and Writing	3
EN	105	Principles of English Grammar	3
EN	109	Writing for Technology and Business	3
EN	125	Techniques of Proofreading and Editing	3
EN	240	Organization and Development of Technical Documents	3
MG	101	Principles of Management	
	or		
MG	121	Introduction to Marketing	
	or		
MG	205	Human Relations in Management	3
SP	112	Business and Professional Speech Communication	
	or		
SP	212	Effective Technical Presentations	3

Total credit hours 28

TEACHER EDUCATION

See Education

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 A.A. in arts and sciences.

Dance (R)

Arts and Sciences A.A.

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

DN 100	Introduction to Dance	3
DN 101-207	Dance technique*	3
EN 101	Techniques of Reading and Writing	3
	<i>Health foundation</i>	1
	<i>Mathematics foundation</i>	3
PE 101-199	Physical education elective	1
TH 120	Performance Production	1

Second Semester

DN 101-207	Dance technique*	3
DN 120	Rhythmic Training for the Dancer	2
	<i>English foundation</i>	3
TH 120	Performance Production	1
TH 121	Movement for the Performer	3
	<i>Natural sciences lab distribution</i>	4
	<i>Behavioral and social sciences distribution</i>	3

Third Semester

DN 101-207	Dance technique*	3
DN 150	Introduction to Dance Composition	3
	DN elective [†]	2
PE 101-199	Physical education elective	1
TH 120	Performance Production	1
	<i>Behavioral and social sciences distribution</i>	3
	<i>Humanities distribution</i>	3

Fourth Semester

DN 101-207	Dance technique*	6
	DN elective [†]	3
SP 108	Fundamentals of Speech	3
	<i>Arts or humanities distribution</i>	3
	<i>Natural sciences non-lab or lab distribution</i>	3 (4)

Total credit hours 68 (69)

*At least three credits, elementary level or higher; must be taken in each area: ballet, modern dance, and jazz.

[†]Any course in dance, speech, or theatre not already required in the option may be taken to fulfill the dance elective. MU 108 may also be acceptable.

Theatre Performance (R)

Arts and Sciences A.A.

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

EN 101	Techniques of Reading and Writing	3
	<i>Mathematics foundation</i>	3
TH 108	Introduction to the Theatre	3
TH 109	Fundamentals of Acting	3
TH 120	Performance Production	1
	<i>Behavioral and social sciences distribution</i>	3

Second Semester

	<i>English foundation</i>	3
SP 108	Fundamentals of Speech	3
TH 112	Intermediate Acting	3
TH 114	Stagecraft I	3
TH 121	Movement for the Performer	3
	<i>Natural sciences lab distribution</i>	4

Theatre Performance (*continued*)**Third Semester**

	<i>Health foundation</i>	1
MU 108	Class Voice	
	or	
SP 110	Oral Interpretation	2 (3)
SP 109	Voice and Diction	3
TH 120	Performance Production	1
TH 225	Acting for Film and Television	3
	<i>Humanities distribution</i>	3
	<i>Natural sciences non-lab or lab</i> <i>distribution</i>	3 (4)

Fourth Semester

	DN or PE elective(s)*	3
TH 117	Fundamentals of Play Directing	3
TH 120	Performance Production	1
TH 219	History of Theatre I	3
	Technical theatre elective [†]	3
	<i>Behavioral and social sciences</i> <i>distribution</i>	3

Total credit hours 67 (69)

*Students may select dance or physical education courses for a total of three semester hours.

[†]Select TH 116, TH 208, or TH 230.

Theatre Technical (R)**Arts and Sciences A.A.**

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 Semester

EN 101	Techniques of Reading and Writing	3
	<i>Health foundation</i>	1
	<i>Mathematics foundation</i>	3
SP 108	<i>Fundamentals of Speech</i>	3
TH 108	<i>Introduction to the Theatre</i>	3
TH 114	<i>Stagecraft I</i>	3

Second Semester

	<i>English foundation</i>	3
PE 101–199	Physical education elective*	1
TH 109	<i>Fundamentals of Acting</i>	3
	Technical major elective [†]	3
	Technical theatre elective [‡]	3
	<i>Natural sciences lab distribution</i>	4

Third Semester

PE 101–199	Physical education elective*	1
TH 120	Performance Production	1
	Technical theatre elective	3
TR 230	Organization and Administration for the Performing Arts	3
	<i>Behavioral and social sciences distribution</i>	3
	<i>Humanities distribution</i>	3
	<i>Natural sciences non-lab or lab</i> <i>distribution</i>	3 (4)

Fourth Semester

PE 101–199	Physical education elective*	1
TH 117	Fundamentals of Play Directing	3
TH 120	Performance Production	1
TH 219	History of Theatre I	3
	Technical major elective(s) [†]	6
	<i>Behavioral and social sciences</i> <i>distribution</i>	3

Total credit hours 67 (68)

*Students may select dance or physical education courses for a total of three semester hours.

[†]Select AR 101–108, AR 127, AR 205, TR 130, or TR 131.

[‡]Select TH 116, TH 118, or TH 208.

WEB CAREERS**Web Careers A.A.S.***(Pending approval)*

This career curriculum is designed to meet the expanding needs of both students and the business community in preparing technically skilled individuals in Web development. This program is intended to prepare students for positions involving designing and maintaining professional Web sites, programming for the Web, Web security, and E-commerce. The curriculum prepares students to qualify for professional Web certification.

General Education and Other Requirements (23 credit hours)

EN 101	Techniques of Reading and Writing3
	<i>English foundation</i>3
	<i>Health foundation</i>1
	<i>Mathematics foundation</i>3
	<i>Speech foundation</i>3
	<i>Arts or humanities distribution</i>3
	<i>Behavioral and social sciences distribution</i> .3
	<i>Natural sciences lab distribution</i>4

Web Content, Design, and Marketing Track (38–40 credit hours)

AA 110	Computer Essentials for the Graphic Designer*4
AA 214	Digital Imaging with Photoshop4
AA 216	Digital Imaging with Illustrator
or	
CG 120	Computer Graphics: Art and Illustration I4
AA 218	Graphic Design for the Web4
AR 103	Design I3
CA 172	Internet and Web Literacy†3
CA 272	Web Page Development with XHTML .3
CA 275	Establishing a Business Web Site3
CG 210	Computer Animation and Illustration
or	
PR 125	Web Interactivity and Animation4
	Electives: Select two of the following: AC 201, AR 101, AR 105, BA 101, CA 269, CA 273, CG 222, CS 269, MG 121, and PR 1206–8

Total credit hours for Web content, design, and marketing track 61–63

Web Programming Track (39 credit hours)

CA 172	Internet and Web Literacy†3
CA 272	Web Page Development with XHTML .3
CA 276	Dynamic HTML with JavaScript3
CA 277	XML and Its Applications3
CA 278	Web Database Applications3
CS 140	Introduction to Programming3
CS 210	Computer Security3
CS 213	Java Programming Language3
CS 214	Advanced Java Programming3
CS 215	Visual Basic Programming3
CS 216	UNIX Operating System3
	Electives: Select two of the following courses: CA 269, CA 274, CS 226, CS 269, and CS 270.6

Total credit hours for Web programming track 62

Web Technologies Track (39 credit hours)

AA 110	Computer Essentials for the Graphic Designer*4
AA 218	Graphic Design for the Web4
CA 172	Internet and Web Literacy†3
CA 271	Computer Networking3
CA 272	Web Page Development with XHTML .3
CA 273	Advanced Web Technologies3
CA 274	Administering a Web Site
or	
CS 210	Computer Security3
CA 275	Establishing a Business Web Site3
PR 125	Web Interactivity and Animation4
	Electives: Select three of the following courses: BA 101, CA 269, CA 276, CA 277, CA 278, CS 113, CS 140, CS 213, and CS 2699

Total credit hours for Web technologies track 62

*Students may test out of AA 110 or they may earn credit by examination.

†Students who test out of CA 172 may substitute AR 103 Design I or CA 273 Advanced Web Technologies.

Web Content, Design, and Marketing Certificate (R)

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 Web site 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.

Web Content, Design, and Marketing Certificate *(continued)*

AA 110	Computer Essentials for the Graphic Designer*	4
AA 214	Digital Imaging with Photoshop	4
AA 218	Graphic Design for the Web	4
AR 103	Design I	3
CA 172	Internet and Web Literacy†	3
CA 272	Web Page Development with XHTML	3
CA 275	Establishing a Business Web Site	3
CG 120	Computer Graphics: Art and Illustration I	4
CG 210	Computer Animation and Illustration	
or		
PR 125	Web Interactivity and Animation	4
	Electives: Select two of the following courses: AC 201, AR 101, AR 105, BA 101, CA 269, CA 273, CG 222, CS 269, MG 121, and PR 120	6–8
	Total credit hours	38–40

*Students may test out of AA 110 and substitute another elective, or they may earn credit by examination.

†Students who test out of CA 172 may substitute CA 273 *Advanced Web Technologies*.

Web Programming Certificate

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.

CA 172	Internet and Web Literacy*	3
CA 272	Web Page Development with XHTML	3
CA 276	Dynamic HTML with JavaScript	3
CA 277	XML and Its Applications	3
CA 278	Web Database Applications	3
CS 140	Introduction to Programming	3
CS 210	Computer Security	3
CS 213	Java Programming Language	3
CS 214	Advanced Java Programming	3
CS 215	Visual Basic Programming	3
CS 216	UNIX Operating System	3
	Electives: Select two of the following courses: CA 269, CA 274, CS 226, CS 269, and CS 270.	6
	Total credit hours	39

*Students who test out of CA 172 may substitute CA 273 *Advanced Web Technologies*.

Web Technologies Certificate (G,R)

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 Web site management, basic Web site design, effective communication between Web authors and system administrators, HTML validity, editorial responsibilities, and liaison with graphic artists and others.

AA 110	Computer Essentials for the Graphic Designer*	4
AA 218	Graphic Design for the Web	4
CA 172	Internet and Web Literacy†	3
CA 271	Computer Networking	3
CA 272	Web Page Development with XHTML	3
CA 273	Advanced Web Technologies	3
CA 274	Administering a Web Site	
or		
CS 210	Computer Security	3
CA 275	Establishing a Business Web Site	3
PR 125	Web Interactivity and Animation	4
	Electives: Select three of the following courses: BA 101, CA 269, CA 276, CA 277, CA 278, CS 113, CS 140, CS 213, and CS 269.	9
	Total credit hours	39

*Students may test out of AA 110 and substitute another elective, or they may earn credit by examination.

†Students who test out of CA 172 may add a fourth elective.