

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 three degrees (the associate of arts, the associate of science, and the associate of applied science) and certificates. In addition, the College recognizes students who satisfactorily complete certain courses with letters of recognition.

Associate's Degree

An associate's degree recognizes successful completion of a 60- to 70-credit combination of general education courses in English, mathematics, arts, behavioral and social sciences, humanities, and science (see the General Education section on pages 56–60 for more information); courses in a specific concentration or skill area; and, in some situations, electives.

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 these four programs, Montgomery College lists *concentrations*, which allow students to focus their studies in specific areas (for example, arts and sciences program—music concentration). Only officially approved concentrations appear on transcripts.

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 and in nursing.

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 A.A.S. programs, Montgomery College offers different *options*, which allow students to focus their studies in specific areas (for example, engineering technologies program—microcomputer technician option).

Certificate

A certificate recognizes successful completion of a sequence of courses (12–38 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.

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. Campus-specific courses, like all courses, may not be offered every semester or every year.

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 listed in the table on pages 61–64 and described in detail beginning on page 66.

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 access career exploration assistance at Montgomery College, including the Career/Transfer Centers, counseling services, academic faculty in areas of interest, workshops on career exploration, and career development courses, and should 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. The Strong Interest Inventory and Self-Directed Search can help the student identify interests and match them with possible occupations. These interest inventories can be taken 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. Academic advisers and counselors 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 strongly encouraged to select and complete a transfer degree or a custom-designed degree using the general studies A.A. curriculum before transferring to a four-year institution.

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 without loss of credit. Schools with which Montgomery College maintains articulation agreements include the University of Maryland system, Howard University, Trinity College, The George Washington University, The Johns Hopkins University School of Continuing Studies, The Catholic University of America Metropolitan College, and Rensselaer Polytechnic Institute. Montgomery College and University of Maryland University College (UMUC) have a dual admission agreement that allows students to complete an associate's degree in the areas of business administration/management or information science/computer science at

Montgomery College and a bachelor's degree at UMUC without leaving Montgomery County. Similarly, an agreement between Montgomery College and Hood College allows students to complete an associate's degree at Montgomery College and bachelor's and master's degrees at Hood in certain disciplines in five years of full-time study. Contact the counseling center or Career/Transfer Center on any campus for complete information on articulation agreements.

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 *Montgomery College Transfer Manual*, available from the Career/Transfer Centers on all three campuses. Students can also obtain this information through the statewide computerized articulation system, ARTSYS, available in the Career/Transfer Center on each campus and at <http://artweb.usmd.edu>, or they can visit Montgomery College's Transfer Information Site at www.montgomerycollege.org/departments/studev/transfer.htm. Students should also consult the appropriate catalogs or bulletins and/or meet with a responsible adviser at the transfer institution.

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 K 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 distribution courses must be from different disciplines (courses from the distribution list on page 58 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 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
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 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	Major Foreign 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)

Humanities Distribution (HUMD)

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

Natural Sciences Distribution

Natural Sciences Distribution with Lab (NSLD)			CH 120	Essentials of Organic and Biochemistry
AS 101	Introductory Astronomy	GL 101	Physical Geology	
AS 102	Introduction to Modern Astronomy (R)	GL 102	Historical Geology	
BI 101	General Biology	ME 101	Meteorology: An Introduction to Weather (R)	
BI 102	General Biology	PC 101	Physical Science I	
BI 105B	Environmental Biology Laboratory (must be taken with BI 105A for NSLD credit)	PC 102	Physical Science II	
BI 107	Principles of Biology	PH 110	Sound and Lights in the Arts (R)	
BI 108	Principles of Biology	PH 151	Technical Physics I	
BI 111	Botany I	PH 152	Technical Physics II	
BI 131	Human Structure and Function I (G&TP)	PH 203	General Physics I	
BI 132	Human Structure and Function II (G&TP)	PH 204	General Physics II	
BI 204	Human Anatomy and Physiology I	PH 262	Electricity and Magnetism	
BI 205	Human Anatomy and Physiology II	PH 263	Waves, Optics, and Modern Physics	
BI 207	Ecology			
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)			

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	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			


Curricula Summary

Title	A.A.	A.S.	A.A.S.	Certificate	Letter of Recognition	Page
Accounting			G R	G R		66
Administrative Support Technology— <i>see</i> Computer Applications						
Advertising Art— <i>see</i> Visual Communications Technologies						
Advertising Design— <i>see</i> Visual Communications Technologies						
American Sign Language			GRTP			68
Applied Geography			R			69
Cartography and Geographic Information Systems				R		70
Geographic Education				R		70
Architectural and Construction Technology						70
Architectural Technology			R			71
CAD for the Building Professional				R		71
Management of Construction			R	R		72
Arts and Sciences						
Art	G TP					73
Specialized Art				G R TP		73
Art Education	R					74
Art History	R					75
Studio Art	R			G R TP		75
Health Enhancement, Exercise Science, and Physical Education						103
Athletic Training/Sports Medicine	R					104
Exercise Science/Health Fitness Leadership	R					105
Gerontology	R					106
Health Education	R					107
Personal Training				R		108
Physical Education Teacher Preparation/Coaching	R					108
Interior Design—Preprofessional	R					112
Liberal Arts and Sciences						115
Arts Concentration	G R TP					115
International Studies Concentration	G R TP					116
Science or Mathematics Concentration	G R TP					117
Music	R			R		121
Pre-Dentistry	G R TP					130
Pre-Medical Technology	G R TP					131
Pre-Medicine	G R TP					132
Pre-Optometry	G R TP					132
Pre-Pharmacy	G R TP					133

CURRICULA

“I snowboard, bike, hike, and camp. Ninety percent of all people who know me don’t know that I cook. I’m going to graduate school in nursing in May. I’ve been working toward this for a long time. I’ll be an R.N. when I’m done, but plan on getting an advanced degree. Getting into science—particularly hands-on stuff in biology—really changed my life.”

—Paul H.



Note: G—Germantown; R—Rockville; TP—Takoma Park. See page 54 for an explanation of degrees, certificates, and letters of recognition.

Title	Letter of				Page
	A.A.	A.S.	A.A.S.	Certificate	
Theatre					136
Dance	R				136
Theatre Performance	R				137
Theatre Technical	R				138
Automotive Technology			R		77
Automotive Air Conditioning Specialist				R	77
Automotive Drive Train Specialist				R	78
Automotive Driveability Specialist				R	78
Automotive Electrical Systems Specialist				R	78
Automotive Suspension, Brake, and Alignment Specialist				R	78
Biotechnology			G	G	79
Building Trades Technology			R	R	80
Business	G R TP				81
International Business	G R TP				81
Communication and Broadcasting Technology— <i>see Visual Communications Technologies</i>					
Computer Applications			G R TP		84
<i>see also Microcomputer Technician</i>					
Administrative Support Technology				R	86
Desktop Publishing				G R TP	86
Help Desk Certificate				G R TP	87
Information Technology				G R TP	87
Web Specialist				G R TP	87
Computer Graphics: Art and Animation— <i>see Visual Communications Technologies</i>					
Computer Science and Technologies					88
<i>see also Microcomputer Technician</i>					
Computer Programming				G R TP	89
Computer Science	R				88
Information Systems	G R TP				88
Criminal Justice			R		89
Early Childhood Education Technology			R	R	92
Engineering Science					93
Aerospace Engineering		G R TP			93
Biological Resources Engineering		G R TP			93
Chemical Engineering		G R TP			94
Civil Engineering		G R TP			94
Computer Engineering		G R TP			95
Electrical Engineering		G R TP			95
Fire Protection Engineering		G R TP			96
General Engineering		G R TP			97
Mechanical Engineering		G R TP			96
Nuclear Engineering		G R TP			97

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Title	Letter of				Page
	A.A.	A.S.	A.A.S.	Certificate	
Engineering Technologies					98
A+ Microcomputer Certification Qualification					G 101
Computer-Aided Drafting and Design Microcomputer Technician				G	100
Fire Science Fire Service Management				G	101
Fire and Arson Investigation				R	102
General Studies	G R TP				103
Geography—see Applied Geography					
Graphic Design with the Computer— <i>see Visual Communications Technologies</i>					
Health Enhancement, Exercise Science, and Physical Education—see Arts and Sciences					
Health Sciences— <i>see also Arts and Sciences and Biotechnology</i>					
Diagnostic Medical Sonography				TP	90
Health Information Technology				TP	109
Medical Coder/Abstractor				TP	110
Medical Coder/Abstractor/Biller				TP	110
Mental Health Associate				TP	121
Nursing		TP			126
Physical Therapist Assistant				TP	130
Radiologic (X-Ray) Technology				TP	135
Surgical Technologist				TP	136
Hospitality Management				R	111
Food and Beverage Management				R	111
Meeting and Conference Planners				R	112
Illustration—see Visual Communications Technologies					
Interior Design—Preprofessional— <i>see also Arts and Sciences</i>				R	113
Landscape Technology				G	113
Legal Assistant—see Paralegal Studies					
Liberal Arts and Sciences—see Arts and Sciences					
Management					117
Diversity Management					G R TP 118
Diversity Training				G R	118
General Management				G R TP	117
Human Resources Management				G R	118
Marketing				R	119
Merchandising				R	119
Public Management				G R	120
Supervisory Management					G RTP 120
Music—see Arts and Sciences					

Note: G—Germantown; R—Rockville; TP—Takoma Park. See page 54 for an explanation of degrees, certificates, and letters of recognition.

Title	A.A.	A.S.	A.A.S.	Certificate	Letter of Recognition	Page
Network Engineering			G			123
Network Administration				G		124
Network Engineer				G		124
Nursing— <i>see</i> Health Sciences						
Office Technology— <i>see</i> Administrative Support Technology						
Paralegal Studies			G TP	G TP		127
Legal Analysis					G R TP	128
Photography— <i>see</i> Visual Communications Technologies						
Physical Education— <i>see</i> Health Enhancement, Exercise Science, and Physical Education (under Arts and Sciences)						
Printing Management			R			134
Electronic Imaging Prepress				R		134
Printing Technology				R		134
Radio— <i>see</i> Visual Communications Technologies						
Teacher Education						136
Technical Writing				G		136
Television— <i>see</i> Visual Communications Technologies						
Theatre— <i>see</i> Arts and Sciences						
Visual Communications Technologies						
Advertising Art						66
Advertising Design			R			67
Computer Graphics: Art and Animation				R		67
Graphic Design with the Computer				R		67
Illustration			R			68
Communication and Broadcasting Technology						82
Broadcast Journalism				R		82
Digital Multimedia Production				R		82
Radio			R			83
Radio Production				R		83
Television			R			83
Television Production				R		84
Photography			R			128
Electronic Photography				R		129
Photographic Techniques				R		129
Photography Master				R		129
Portrait, Fashion, and Photojournalism				R		129
Studio and Location Photography				R		129

Note: G—Germantown; R—Rockville; TP—Takoma Park. See page 54 for an explanation of degrees, certificates, and letters of recognition.

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
Nursing
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
Diagnostic Medical Sonography
Fire Science Fire Service Management
(including Fire and Arson Investigation)
Health Information Technology
Radiologic (X-Ray) Technology
Technical Writing

ACCOUNTING (G,R)–A.A.S.

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.

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 further 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
EN 101	Techniques of Reading and Writing	3
	<i>Mathematics foundation</i>	3
	<i>Economics elective*</i>	3

Second Semester

AC 202	Principles of Accounting II	4
	<i>English foundation</i>	3
	<i>Speech foundation</i>	3
	<i>Arts or humanities distribution</i>	3
	Computer applications or computer science and technologies elective	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.

†Must be selected from any accounting course numbered 209 or higher, except for AC 219, or from MG 202 or a statistics course (BA 210 or MA 116).

Accounting Certificate Option (G,R)

The accounting certificate option 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 options in the advertising art curriculum leading to the A.A.S.: advertising design and illustration. In addition, two certificate options 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

Advertising Art (continued)

interested in any of the A.A.S. or certificate options should consult an academic adviser in the Visual Communications Technologies Department. For other related curricula offered by this department, see Communication and Broadcasting Technology (pp. 82–84) and Photography (pp. 128–129).

Advertising Design Option (R)–A.A.S.

The advertising design option 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	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	Graphic Design with the Computer I	3
AA 124	Advertising Design I	3
AA 134	Illustration I	3
AR 102	Drawing II	3
	<i>English foundation</i>	3

Third Semester

AA 210	Graphic Design with the Computer II	4
AA 235	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 60

Computer Graphics: Art and Animation Certificate Option (R)

This certificate option emphasizes the aesthetic knowledge and technical skills necessary to produce effective computer graphics and animation. Upon completing the certificate, 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 210, AA 224, AA 225, AR 102, AR 105, AR 201, AR 205, AR 224, CA 161, CG 125, 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 210 as electives.

Graphic Design with the Computer Certificate Option (R)

This certificate program 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. Completion of the requirements leads to the award of the certificate.

Graphic Design with the Computer Certificate Option (continued)

Required Course

AA 110 Graphic Design with the Computer I* . . .3

Elective Courses (Select 18–22 credits)

AA 210A Graphic Design with the Computer II—
Quark XPress for Macintosh†4

AA 210B Graphic Design with the Computer II—
Photoshop for Macintosh†4

AA 210C Graphic Design with the Computer II—
Illustrator for Macintosh†4

AA 210D Graphic Design with the Computer II—
Digital Image Production for
Macintosh†4

AA 210F Graphic Design with the Computer II—
Presentation Graphics for
Macintosh†4

AA 121 Advertising Art Fundamentals‡3

AA 124 Advertising 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

Total credit hours 21–25

*The advertising art faculty adviser may waive this course for students who can demonstrate proficiency. Such students will take additional electives to complete the total number of credit hours.

†Students should select three courses from the AA 210A–F sequence (12 credits).

‡Students with no graphic design background should select AA 121 and AA 124 to complete their electives.

**Students with graphic design experience should select from CG 120, CG 121, and CG 210, or from the AA 210A–F courses not already taken.

Illustration Option (R)–A.A.S.

This option 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 Fundamentals3

AR 101 Drawing I3

AR 103 Design I3

EN 101 Techniques of Reading and Writing . . .3

*Behavioral and social sciences
distribution3*

Second Semester

AA 134 Illustration I3

AR 102 Drawing II3

CG 120 Computer Graphics: Art and
Illustration I4

English foundation3

Health foundation1

Third Semester

AA 135 Illustration II3

AR 107 Art History I3

AR 201 Painting I3

CG 121 Computer Graphics: Art and
Illustration II4

Mathematics foundation3

Fourth Semester

AA 234 Illustration III3

AR 108 Art History II3

CG 210 Computer Animation and
Illustration4

SP 108 Fundamentals of Speech3

Natural sciences lab distribution4

Total credit hours 62

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, 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.

American Sign Language (continued)

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

English foundation3

SL 100 Conversational ASL I4

SL 101 Structural ASL I3

SL 105 Visual Gestural Communication
Foundations I2

SL 106 Fingerspelling and Number Use
in ASL I1

Speech foundation3

Second Semester

Health foundation1

Mathematics foundation3

SL 102 Structural ASL II3

SL 110 Conversational ASL II3

SL 115 Visual Gestural Communication
Foundations II2

SL 116 Fingerspelling and Number Use
in ASL II1

Third Semester

SL 200 Conversational ASL III3

SL 201 Structural ASL III3

SL 226 Semantics and Communication
in ASL I1

SL 269 Independent Study in ASL1–4

*Behavioral or social sciences
distribution3*

Natural sciences lab distribution4

Fourth Semester

SL 202 Structural ASL IV3

SL 207 ASL Translation and Interpretation for
Literature3

SL 210 Conversational ASL IV3

SL 236 Semantics and Communication
in ASL II1

SL 285 Practicum in ASL3–4

Arts or humanities distribution3

Total credit hours 60–64

APPLIED GEOGRAPHY (R)–A.A.S.

This curriculum is designed primarily for the student who desires to pursue a profession in geography, cartography, geographic education, or geographic information systems (GIS). This 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 agricultural 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 Geography3

GE 151 Introduction to Cartography3

Mathematics foundation3 (4)

Natural sciences lab distribution4

Second Semester

English foundation3

GE 102 Cultural Geography3

GE 104 Physical Geography4

GE 152 Interpretation of Geographic Imagery:
Use and Analysis3

HE 100 Principles of Healthier Living1

Applied Geography (*continued*)

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

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
	Mathematics or computer science elective	3 (4)
Total credit hours		60 (62)

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

Cartography and Geographic Information Systems Certificate Option (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 Option (R)

This certificate option 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 program 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 certificate option provides students with an opportunity to test their interest prior to making a commitment for advanced study. Course work in this certificate option 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 from GE 103, GE 152, GE 201, or GE 202.

ARCHITECTURAL AND CONSTRUCTION TECHNOLOGY

The architectural and construction technology curriculum consists of two A.A.S. program options—(1) architectural technology and (2) management of construction—and two certificate options—(1) CAD for the building professional and (2) management of construction. Both of the A.A.S. options are designed to prepare graduates for entry into paraprofessional positions in the construction industry and architecture upon completion of the program of study.

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

Architectural Technology Option (R)–A.A.S.

Graduates of this option may 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. They may involve themselves in one or more of the many specialized aspects of the construction industry. Some of the jobs graduates may perform include preparation of contract drawings, supervision and/or inspection of construction work, preparation of sketches and detailed drawings for proposed buildings, and numerous other more specialized jobs. Students planning to transfer to professional architectural degree programs should be aware that not all courses in the curriculum may transfer.

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

First Semester

CT 130	Construction Methods and Materials . . .	3
CT 136	Introduction to Architecture and the Built Environment	3
CT 142	Architectural Presentation—Studio I . . .	3
CT 181	Architectural Drafting Techniques	3
EN 101	Techniques of Reading and Writing	3
	<i>Health foundation</i>	1

Second Semester

CT 131	Construction Plan Reading	
or		
	Professional elective*	3
CT 144	Architectural Design Principles—Studio II	3
CT 183	Computer Drafting: Architectural Applications	4
EN 109	<i>Writing for Technology and Business</i>	
or		
	<i>English foundation</i>	3
	<i>Mathematics foundation</i>	3 (4)

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

Third Semester

AR 209	<i>History of Architecture I</i>	
or		
	<i>Arts or humanities distribution</i>	3
CT 132	Construction Contracts and Specifications	
or		
	Professional elective*	3
CT 223	Computer Design and Presentation Techniques	4
CT 291	Building Codes and Inspection	
or		
	Professional elective*	3
PH 203	<i>General Physics I</i>	
or		
	<i>Natural sciences lab distribution</i>	4

Fourth Semester

CT 224	Advanced Computer Drafting	4
CT 232	Architectural Design—Studio III	4
CT 283	Mechanical and Electrical Systems	
or		
	Professional elective*	3
SP 108	<i>Fundamentals of Speech</i>	
or		
	<i>Speech foundation</i>	3
	<i>Behavioral and social sciences distribution</i>	3
Total credit hours		66 (67)

*Professional electives: AR 210, CA 120, CT 133, CT 199-200, CT 271, CT 284, CT 286, CT 288, CT 299, ID 260.

CAD for the Building Professional Certificate Option (R)

This certificate 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 certificate 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. option.

CA 120	Introduction to Computer Applications	3
CT 130	Construction Methods and Materials . . .	3
CT 131	Construction Plan Reading	3

CAD for the Building Professional Certificate Option (continued)

CT 181	Architectural Drafting Techniques	3
CT 183	Computer Drafting: Architectural Applications	4
CT 223	Computer Design and Presentation Techniques	4
CT 224	Advanced Computer Drafting	4
EN 109	Writing for Technology and Business	3
	<i>Mathematics foundation</i>	3
Total credit hours		30

Management of Construction Option (R)–A.A.S.

This A.A.S. option 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 program of study 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. It is necessary that a student seeking a four-year bachelor's degree meet with an academic adviser in the Applied Technologies Department 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

Second Semester

CA 120	Introduction to Computer Applications	3
CT 132	Construction Contracts and Specifications	3
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	3
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 Option (R)

This certificate 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. program. The student may transfer to the A.A.S. option.

CT 130	Construction Methods and Materials	3
CT 131	Construction Plan Reading	3
CT 133	Construction Management	3
CT 135	Construction Field Operations	3

Management of Construction Certificate Option (continued)

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

Second Semester

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

Third Semester

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

Fourth Semester

	<i>Speech foundation</i>	3
	<i>Arts or humanities distribution[‡]</i>	3
	<i>Behavioral and social sciences distribution*</i>	3
	Art electives (2) [†]	6
	<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.

Specialized Art Certificate Option

This certificate is designed for students who want an intensified concentration in drawing, painting, printmaking, ceramics, sculpture, or jewelry and metalsmithing. Students who complete this certificate 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.

Specialized Art Certificate Option (continued)

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	3
AR 226	Monotype Workshop	3
AR 280C	Studio Practicum	3
AR 281C	Studio Practicum	3
AR 285C	Individualized Art Workshop	3

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	3
AR 281G	Studio Practicum	3
AR 285G	Individualized Art Workshop	3

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.

ART EDUCATION (R)–A.A.

This concentration 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 concentration 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

AA 124	Advertising Design I	3
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

Art Education (continued)

Third Semester

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

Fourth Semester

AR 201	Painting I	3
AR 221	Sculpture I	3
PE 101–199	Physical education elective	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)–A.A.

This concentration is designed for the student who is interested primarily in the historical and aesthetic aspects of the subject rather than in the production of art and who plans to transfer to a four-year program to pursue a degree in museum work, art research, or art history. Completion of all requirements for this concentration 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)–A.A.

This concentration 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 concentration 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 concentration 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.

Studio Art (*continued*)**First Semester**

AR 101	Drawing I	.....3
AR 103	Design 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	Techniques of Reading and Writing	.....3
	<i>Behavioral and social sciences distribution*</i>3

Third Semester

	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)
	Art, advertising art, or interior design elective**	.....3

Fourth Semester

AR 201	Painting I	.....3
AR 221	Sculpture I	.....3
	Art, advertising art, or interior design 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.

[†]AR 121, AR 123, AR 124, or AR 229.

[‡]Select AR 213, AR 214, AR 223, AR 224, or AR 226.

**Recommend CG 120 or PG 150.

Studio Art Certificate Option

This certificate is designed to provide a strong foundation in art while offering an opportunity for generalized study. Students who complete this certificate 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 one of the following courses: AR 112, AR 113, AR 121, AR 122, AR 123, AR 124, AR 125, 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.

ARTS AND SCIENCES

For reference to concentrations leading to an A.A. in arts and sciences, see pages 61–62.

AUTOMOTIVE TECHNOLOGY (R)–A.A.S.

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 program 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.

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
CH 109A/B	Chemistry and Society/ <i>Chemistry and Society Laboratory*</i>	
	or	
	<i>Natural sciences lab distribution</i>	.....4
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>	.....3
	<i>Mathematics foundation</i>	.....3
	<i>Behavioral and social sciences distribution</i>	.....3

Third Semester

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

Fourth Semester

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

Also available are five certificate curricula designed for those who wish to upgrade their competence.

Automotive Air Conditioning Specialist Certificate Option (R)

This 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 program prepares technicians for A.S.E. Certification Test A7, Heating and Air Conditioning. A certificate is awarded upon successful completion of this curriculum. The student who completes the certificate 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
EN 101	Techniques of Reading and Writing	.....3
	Automotive technology elective	.....4
	Mathematics elective	.....3

Total credit hours 24

Automotive Drive Train Specialist Certificate Option (R)

This 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 program prepares technicians for the following A.S.E. Certification Tests: A1, Engine Repair; A2, Automatic Transmission/Transaxle; and A3, Manual Drive Train and Axles. A certificate is awarded upon successful completion of this curriculum. The student who completes the certificate 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
EN	101	Techniques of Reading and Writing	3
		Automotive technology elective	4
		Mathematics elective	3
			Total credit hours 32

Automotive Driveability Specialist Certificate Option (R)

This 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 program prepares technicians for the following A.S.E. Certification Tests: A1, Engine Repair; A6, Electrical Systems; and A8, Engine Performance. A certificate is awarded upon successful completion of this curriculum. The student who completes the certificate 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
		Mathematics elective	3
			Total credit hours 33

Automotive Electrical Systems Specialist Certificate Option (R)

This curriculum is intended to prepare people for immediate employment as automotive electrical systems and component technicians. This program prepares technicians for the A.S.E. Certification Test A6, Electrical Systems. A certificate is awarded upon successful completion of this curriculum. The student who completes the certificate 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
EN	101	Techniques of Reading and Writing	3
		Automotive technology elective	4
		Mathematics elective	3
			Total credit hours 24

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

This 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 program prepares technicians for the following A.S.E. Certification Tests: A4, Suspension and Steering; and A5, Brakes. A certificate is awarded upon successful completion of this

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

curriculum. The student who completes the certificate may continue study toward the associate's degree in automotive technology.

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
EN	101	Techniques of Reading and Writing	3
		Automotive technology elective	4
		Mathematics elective	3
			Total credit hours 24

BIOTECHNOLOGY (G)–A.A.S. Statewide Program

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. 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>	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	4
	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
		Mathematics elective	3
			Total credit hours 61(62)

Biotechnology Certificate Option (G)

This certificate is intended to prepare people for immediate employment in the biotechnology field. This option 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 program, 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 (R)-A.A.S.

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 concentration in carpentry; electrical; heating, ventilation, and air conditioning (HVAC); 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.

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>	
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, Ventilating, and Air Conditioning I	
BU 240	Carpentry II	.....4
or one of the following:		
BU 244	Electricity II	
BU 246	Plumbing II	
BU 248	Heating, Ventilating, and Air Conditioning 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, CT 299.	
Total credit hours	
61-63	

Building Trades Technology Certificate Option (R)

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

The student elects a major concentration in carpentry; electrical; heating, ventilating, and air conditioning; 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, Ventilating, and Air Conditioning I	
BU 240	Carpentry II	.....4
or one of the following:		
BU 244	Electricity II	
BU 246	Plumbing II	
BU 248	Heating, Ventilating, and Air Conditioning II	
	Professional electives*	.....6
Total credit hours		17

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

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.

First Semester

BA 101	Introduction to Business	.....3
	<i>Mathematics foundation*</i>3 (4)
	<i>Computer applications or computer science elective*</i>3

<i>Behavioral and social sciences distribution[†]</i>3
<i>Elective[‡]</i>3

Second Semester

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

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.

[†]Any designator other than EC.

[‡]EN 101 will satisfy this elective.

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

International 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 curriculum provides 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 associate degree options in the communication and broadcasting technology curriculum, and four certificate options. Students working toward either the radio or the television A.A.S. study broad industry-wide topics, including an introduction to broadcasting, audio production techniques, broadcast journalism, broadcast management, and basic television production. Having acquired this core knowledge, degree-seeking students move on to advanced hands-on, experience-based classes in either radio or television production. This advanced study helps students develop technical skill, aesthetic values, and professional attitudes that will be of value in commercial, industrial, and educational media production and distribution. A transferable General Education component rounds out the two A.A.S. programs.

Students interested in concentrated career preparation without the General Education component may choose certificate options in radio production, television production, broadcast journalism, or the newest program in digital multimedia production, providing technical skills training in digital videography and video editing and digital audio production.

For information on related curricula offered by the Visual Communications Technologies Department, see Advertising Art (pp. 66–68) and Photography (pp. 128–129).

Broadcast Journalism Certificate Option (R)

This certificate 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 Option (R)

This certificate 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 option 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.

First Semester

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 Option (R)–A.A.S.

This option 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>	<i>3</i>
TR 129	Introduction to Broadcasting	3
TR 131	Audio Production Techniques	4

Second Semester

	<i>English foundation</i>	<i>3</i>
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>	<i>3</i>
TR 237	Broadcast Journalism	3
TR 256	Radio Station Operation	3
	<i>Behavioral and social sciences distribution . .</i>	<i>3</i>
	<i>Natural sciences lab distribution</i>	<i>4</i>

Fourth Semester

	<i>Health foundation</i>	<i>1 (3)</i>
	<i>Mathematics foundation</i>	<i>3</i>
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 Option (R)

This certificate 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 Option (R)–A.A.S.

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

Television Option *(continued)*

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 Option (R)

This certificate 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—A.A.S.

See also Microcomputer Technician

The computer applications program is for students who want to use the computer as a tool of productivity. There are four tracks in this program: administrative support technology, help desk technology, information technology, and Web 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 applications. 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 *Web technology track* provides students with a foundation of skills in Web page design and development, and in Web site management. This track can help to prepare students to become members of a Web development team.

Computer Applications *(continued)*

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

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 Data Communications	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 255, CA 261, CA 270, CA 271, CG 120, CS 110, and MG 101		12
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
EN 109	Writing for Technology and Business	3

Electives: At least three must be selected from CA 131, CA 141, CA 151, CA 160, CA 172, CA 232, CA 240, CA 242, CA 252, CA 269, and CA 272. The remaining three electives must be CA, CS, NW, or MT courses.

Total credit hours for help desk track 62

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

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 courses; the remainder must be in CA or related areas (AA, AC, BA, CG, CS, MG, NW, PR)		15
Total credit hours for information technology track		62

Web Technology Track (39[40] credit hours)

CA 172	Internet and Data Communications	3
CA 272	Home Page Construction	3
CA 273	Advanced Web Technologies	3
CA 274	Administering a Web Site	
or		
CS 216	UNIX Operating System	
or		
AA 210F	Graphic Design with the Computer II: Presentation Graphics for Macintosh	3 (4)
CA 275	Establishing a Corporate Intranet	3
Electives: At least 12 credits must be in CA or CS courses; the remainder must be in CA or CS or related areas (AA, AC, BA, CG, MG, NW, PR)		24
Total credit hours for Web technology track		62(63)

CURRICULA

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

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

Administrative Support Technology Certificate (R)

Completion of this certificate program 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 program concentrates on building 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.

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
	Electives: Select CA 120, CA 141, CA 161, CA 172, or CA 255	3
		Total credit hours 30

Administrative Support Technology Letter of Recognition (R)

This sequence is designed for persons who wish to develop skills in administrative support technology. In order to complete each course in this sequence, students will 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. In order 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.

Help Desk Certificate Option

This certificate provides students with essential background to serve as help desk support staffers for computer applications. Upon completion of the certificate, 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 wam rather than completing CA 100.

Information Technology Certificate Option

This certificate 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 Management6-8
Total credit hours 30-32

Web Specialist Certificate Option

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 but are not limited to management of a Web site, effective communication between Web authors and system administrators, ensuring HTML validity, optimizing Web architecture, assuming editorial responsibility, and liaison with graphic artists and others.

CA 172	Internet and Data Communications	3
CA 272	Home Page Construction	3
CA 273	Advanced Web Technologies	
CA 274	Administering a Web Site	
	or	
CS 216	UNIX Operating System	
	or	
AA 210F	Graphic Design with the Computer II: Presentation Graphics for Macintosh*	3 (4)
CA 275	Establishing a Corporate Intranet	3
		Total credit hours 15 (16)

* May not substitute any other AA 210 course option.

COMPUTER SCIENCE AND TECHNOLOGIES

See also *Microcomputer Technician Option*

The computer science and technologies curriculum consists of two transfer programs and one certificate option relevant to the current knowledge and practice in the world of computers. Completion of all the requirements of either the computer science transfer program or the information systems transfer program will lead to the award of the A.A. in computer science and technologies.

Computer Science (R)–A.A.

This major 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 program, 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)

	<i>English foundation</i>	3
	<i>Health foundation</i>	1
MA 181	Calculus I	4
	<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 distribution</i>	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–A.A.

This concentration 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.

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
CS 110	Computer Concepts	3
EN 101	Techniques of Reading and Writing	3
	<i>Mathematics foundation</i>	3 (4)
	<i>Speech foundation</i>	3

Second Semester

AC 202	Principles of Accounting II	4
CS 140	Introduction to Programming	3
	<i>English foundation</i>	3
	<i>Health foundation</i>	1 (3)
	<i>Arts or humanities distribution</i>	3

Information Systems (continued)

Third Semester

BA 210	Statistics for Business Administration	
or		
MA 116	Elements of Statistics	3
CS 136	Systems Analysis and Design	3
CS 225	C Programming Language	
or		
CS 226	Introductory Object-Oriented Programming with C++	3
EC 201	<i>Principles of Economics I</i>	3
	<i>Natural sciences lab distribution</i>	4

Fourth Semester

EC 202	Principles of Economics II	
or		
	CS elective*	3
	<i>Arts distribution</i>	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)
	Total credit hours	61 (65)

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

Computer Programming Certificate Option

This certificate emphasizes software development and computer programming skills. The certificate provides flexibility in the student's choice of programming languages. Students should consult an adviser before beginning the certificate.

CS 110	Computer Concepts *	3
CS 140	Introduction to Programming	3
	Intermediate languages†	6
	Advanced language‡	3
	Computer science or department-approved computer applications 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.

CRIMINAL JUSTICE (R)–A.A.S.

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
	<i>Speech foundation</i>	3
	<i>Natural sciences lab distribution</i>	4
	Criminal justice electives	6

Criminal Justice (*continued*)

Fourth Semester

CJ 242	Theory and Practice	.....3
CJ 244	Contemporary Issues	.....3
	<i>Behavioral and social sciences distribution</i>	.....3
	Computer science or computer applications elective	.....3
	Criminal justice or social science elective	.....3
	Total credit hours	62 (64)

DIAGNOSTIC MEDICAL SONOGRAPHY (TP)—A.A.S. Statewide Program

This curriculum, accredited by the Joint Review Committee in Diagnostic Medical Sonography (JRCDSM), 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 fol-

lowing tracks: general sonography, echocardiography, and vascular. Upon completion of this 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, vascular physics, echocardiography, and vascular ultrasound.

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

General Education and Other Requirements (36 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>Introduction to Computer Applications</i>	.....3
EN 101	<i>Techniques of Reading and Writing</i>	.....3
EN 102	<i>Techniques of Reading and Writing</i>	.....3
	<i>or</i>	
EN 109	<i>Writing for Technology and Business</i>	.....3
HI 125	<i>Medical Terminology I</i>	.....2
HI 126	<i>Medical Terminology II</i>	.....2
HI 135	<i>Concepts of Disease</i>	.....3
MA 152	<i>Applied Precalculus</i>	.....3
PY 102	<i>General Psychology</i>	.....3
SP 108	<i>Fundamentals of Speech</i>	.....3
	<i>Humanities or arts distribution</i>	.....3

Diagnostic Medical Sonography Fundamental Requirements (25 credit hours)

MS 101	Orientation to Diagnostic Medical Sonography	.....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

Diagnostic Medical Sonography (*continued*)

General Sonography Track (9 credit hours)

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

Echocardiography Track (9 credit hours)

MS 215	Diagnostic Medical Sonography: Echocardiography	.....3
MS 217	Diagnostic Medical Sonography: Doppler Principles	.....3
MS 218	Echocardiography II	.....3

Vascular Track (9 credit hours)

MS 216	Diagnostic Medical Sonography: Vascular Sonography	.....3
MS 217	Diagnostic Medical Sonography: Doppler Principles	.....3
MS 219	Vascular Sonography II	.....3
	Total credit hours (for each track)	70

Diagnostic Medical Sonography Certificate Option (TP) Statewide Program

The certificate program is designed for health care professionals, graduates of AMA programs, or those who are registry eligible and desire to become proficient in sonography. A minimum of 34 credit hours is required, and the student may apply these credits toward the associate's degree.

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 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 while enrolled in the program.

At the end of the first year in this program, 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, vascular physics, echocardiography, and vascular ultrasound.

Diagnostic Medical Sonography Fundamental Requirements (25 credit hours)

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

General Sonography Track (9 credit hours)

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

Echocardiography Track (9 credit hours)

MS 215	Diagnostic Medical Sonography: Echocardiography	.....3
MS 217	Diagnostic Medical Sonography: Doppler Principles	.....3
MS 218	Echocardiography II	.....3

Vascular Track (9 credit hours)

MS 216	Diagnostic Medical Sonography: Vascular Sonography	.....3
MS 217	Diagnostic Medical Sonography: Doppler Principles	.....3
MS 219	Vascular Sonography II	.....3
	Total credit hours (for each track)	34

EARLY CHILDHOOD EDUCATION TECHNOLOGY (R)–A.A.S.

This curriculum is designed to train persons 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 program of study 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
HE 100	Principles of Healthier Living	1
PY 102	General Psychology	3
SP 108	Fundamentals of Speech	3

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>	3
SO 101	Introduction to Sociology	3

Third Semester

ED 213	Social Development in Young Children	3
	Curriculum seminar*	2
	<i>Mathematics foundation</i>	3
	<i>Arts distribution</i>	3
	History (selected 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>	4
	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 Option (R)

This curriculum is designed to train 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. A certificate is presented to those who complete the program.

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

Early Childhood Education Certificate Option (continued)

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†

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.

ENGINEERING SCIENCE

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 option listed below. A student interested in Johns Hopkins University should follow the general engineering concentration. A student planning to transfer to a different engineering school or interested in an unlisted engineering field should consult with an engineering adviser.

Aerospace Engineering Concentration—A.S.

This concentration 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.* Completion of all requirements for this concentration will lead to the award of the A.S. in engineering science.

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

First Semester

CH 102	Principles of Chemistry II	4
EN 102	Techniques of Reading and Writing	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 240	Scientific and Engineering Computation	3
MA 280	Multivariable Calculus	4
PH 262	General Physics II	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 Concentration—A.S.

This concentration 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

Biological Resources Engineering
(continued)

University of Maryland College Park Campus. Completion of all requirements for this concentration will lead to the award of the A.S. in engineering science.

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 Concentration—A.S.

This concentration 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 articu-

lated with the chemical engineering program at University of Maryland College Park. Completion of all requirements for this concentration will lead to the award of the A.S. in engineering science.

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 Concentration—A.S.

This concentration 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.* Completion of all requirements for this concentration will lead to the award of the A.S. in engineering science.

Civil Engineering (continued)

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>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	<i>General Physics II</i>	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 Concentration—A.S.

This concentration 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 Campus. Completion of all

requirements for this concentration will lead to the award of the A.S. in engineering science.

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

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 156	Introduction to Discrete Structures	4
EE 244	Digital Logic Design	3
ES 240	Scientific and Engineering Computation	3
	<i>General Physics II</i>	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 Concentration—A.S.

This concentration 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. Completion of all requirements for this concentration will lead to the award of the A.S. in engineering science.

Electrical Engineering (*continued*)

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 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

CS 225	C Programming Language	3
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 63

Fire Protection Engineering Concentration—A.S.

This concentration 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. Completion of all requirements for this concentration will lead to the award of the A.S. in engineering science.

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

CH 203	Organic Chemistry I	5
ES 232	Thermodynamics	3
	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 66

Mechanical Engineering Concentration—A.S.

This concentration 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. Completion of all requirements for this concentration will lead to the award of the A.S. in engineering science.

Mechanical Engineering (*continued*)

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 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 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 Concentration—A.S.

This concentration 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. Completion of all requirements for this concentration will lead to the award of the A.S. in engineering science.

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 221	Dynamics	3
ES 240	Scientific and Engineering Computation	3
MA 280	Multivariable Calculus	4
PH 262	General Physics II	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 Concentration—A.S.

This concentration 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. Completion of all requirements for this concentration will lead to the award of the A.S. in engineering science.

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

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

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

General Engineering (*continued*)

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	Calculus I	4
	<i>Humanities distribution</i>	3

Second Semester

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

Third Semester

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

Fourth Semester

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

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.

ENGINEERING TECHNOLOGIES

The engineering technologies curriculum contains common core courses that provide the foundation and background for related options: automation and control technology, computer-aided drafting and design, electronic technology, and microcomputer technician. Each option provides technical specialty courses which build on the common core courses. Students may pursue a course of study leading to the A.A.S. or, with some options, a certificate. The associate's degree curricula are designed to prepare graduates for technical employment in

a high-technology area. The certificates are provided 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.

Engineering technologists are often support professionals for engineers, but are usually more concerned with the applied phase or practical side of the problems of engineering. For this reason, engineering technology courses and supporting technical courses are directed toward problem solving and the application of principles rather than toward the derivation of formulas and the theoretical approach to these subjects.

Automation and Control Technology Option (G)–A.A.S.

(*New admissions temporarily suspended; program inactive as of summer 2001*)

The focus of this curriculum is to apply and design automated systems. Both the brain (electronics) and muscle (mechanics) of the automated systems will be discussed in detail. The students will learn not only how to use commercially available turnkey robots but also how to build manufacturing automation applications from basic components such as sensors, switches, vision systems, and microprocessors. The laboratory projects support the curriculum emphasis on design content. The design problems challenge the students to use their creativity to seek solutions to problems that are open-ended and have multiple solutions. The A.A.S. will be awarded upon completion of the curriculum.

First Semester

AU 101	Fundamentals of Automation and Control Technology	4
CD 208	Computer-Aided Drafting I*	4
EN 101	Techniques of Reading and Writing	3
ET 110	DC/AC Circuit Analysis I	4
MA 180	Precalculus	4

Automation and Control Technology Option (*continued*)

Second Semester

AU 102	Automation Mechanism and Robot Mechanics	4
	<i>English foundation</i>	3
ET 115	DC/AC Circuit Analysis II	4
MA 153	Applied Calculus with Trigonometry	3
PH 151	<i>Technical Physics I</i>	4

Third Semester

AU 201	Controllers for Automated Systems	4
	<i>Health foundation</i>	1
PH 152	Technical Physics II	4
	<i>Speech foundation</i>	3
	<i>Behavioral and social sciences distribution</i>	3

Fourth Semester

AU 202	Automated System Integration Lab	4
CD 209	Computer-Aided Drafting II	4
ET 280	Engineering Technology Project	3
	<i>Arts or humanities distribution</i>	3

Total credit hours 66

*Previous technical drafting knowledge is required. Students are expected to have an understanding of DOS.

Automation and Control Technology Certificate Option (G)

(*New admissions temporarily suspended; program inactive as of summer 2001*)

The certificate program is designed for persons who already have a mechanical and electrical engineering background. The purpose of this program is to prepare the students for the opportunities existing within the automation and robotics fields.

AU 101	Fundamentals of Automation and Control Technology	4
AU 102	Automation Mechanism and Robot Mechanics	4
AU 201	Controllers for Automated Systems	4
AU 202	Automated System Integration Lab	4
CD 208	Computer-Aided Drafting I*	4
CD 209	Computer-Aided Drafting II	4
ET 280	Engineering Technology Project	3

Total credit hours 27

*Previous technical drafting knowledge is required. Students are expected to have an understanding of DOS.

Computer-Aided Drafting and Design Option (G)–A.A.S.

(*New admissions temporarily suspended; program inactive as of summer 2001*)

Students in this program develop basic skills in engineering drawing and design using computers. Designers and engineers with little computer experience can also benefit from the program. The concepts and applications of computer-aided drafting and design (CADD) will be introduced to the students in a logical manner. The curriculum features extensive hands-on use of CADD equipment and software. Advanced students will learn CADD system configuration and customization. Completion of all requirements for this program will lead to the award of the A.A.S. Employment opportunities for students completing this program are at the drafter (CADD operator) or designer level.

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

First Semester

CD 208	Computer-Aided Drafting I*	4
CS 111	BASIC Programming	3
ET 110	DC/AC Circuit Analysis I	4
	<i>Health foundation</i>	1
MA 180	Precalculus	4

Second Semester

AU 101	Fundamentals of Automation and Control Technology	4
CD 209	Computer-Aided Drafting II	4
EN 101	Techniques of Reading and Writing	3
ET 115	DC/AC Circuit Analysis II	4

Third Semester

AU 102	Automation Mechanism and Robot Mechanics	4
CD 250	Computer-Aided Design I	4
	<i>English foundation</i>	3
PH 151	<i>Technical Physics I</i>	4
	<i>Speech foundation</i>	3

Computer-Aided Drafting and Design Option *(continued)*

Fourth Semester

CD 251	Computer-Aided Design II	4
ET 280	Engineering Technology Project	3
	<i>Arts or humanities distribution</i>	3
	<i>Behavioral and social sciences distribution</i>	3
Total credit hours		63

**Previous technical drafting knowledge is required. Students are expected to have an understanding of DOS.*

Computer-Aided Drafting and Design Certificate Option (G)

This curriculum is designed to provide training, skills, and knowledge that will allow the student to obtain a position in the computer-aided drafting and design field. Students may either enter the job market immediately upon completion of the curriculum or apply earned credits to an existing two-year computer-aided drafting and design curriculum. A certificate is awarded upon successful completion of this curriculum.

CD 208	Computer-Aided Drafting I	4
CD 209	Computer-Aided Drafting II	4
CD 250	Computer-Aided Design I	4
CD 251	Computer-Aided Design II	4
CS 111	BASIC Programming (or other language)	3
ET 280	Engineering Technology Project	3
Total credit hours		22

Electronic Technology Option (G)–A.A.S.

(New admissions temporarily suspended; program inactive as of summer 2001)

This curriculum option is designed to prepare students for careers as technicians in the broad field of electronics. The course of study provides graduates with the ability to transfer into a 2+2 baccalaureate degree program in elec-

tronic technology or enter immediately into occupational employment. The technical courses listed in this option usually will not transfer to an electrical engineering curriculum.

This curriculum is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).

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

First Semester

	<i>English foundation</i>	3
ET 110	DC/AC Circuit Analysis I	4
	<i>Health foundation</i>	1
MA 152	Applied Precalculus	3
MT 127	Microcomputer Control Programs	1
	<i>Speech foundation</i>	3

Second Semester

ET 115	DC/AC Circuit Analysis II	4
ET 117	Digital Logic Circuit Analysis	4
ET 120	Electronic Devices and Systems	4
MA 153	Applied Calculus with Trigonometry	3
PH 151	Technical Physics I	4

Third Semester

ET 131	Programming Applications for Technology	3
ET 220	Electronic Devices and Systems II	4
ET 240	Microcomputer Systems	4
PH 152	Technical Physics II	4

Fourth Semester

ET 229	Communication Systems	4
ET 250	Electronic Technology Project	3
ET 255	Electronic Troubleshooting and Repair	2
	<i>Arts or humanities distribution</i>	3
	<i>Behavioral and social sciences distribution</i>	3
Total credit hours		64

Microcomputer Technician Option (G)–A.A.S.

This program is designed to provide entry-level skills in the field of microcomputer repair and service. The topics covered 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.

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>Natural sciences lab distribution</i>	4
	<i>Speech foundation</i>	3
	<i>Arts or humanities distribution</i>	3
	<i>Behavioral and social sciences distribution</i>	3

Microcomputer Technician Requirements (37 credit hours)

MT 100	Electronics for Computers	4
MT 127	Microcomputer Control Programs	3
MT 140	Microcomputer Configuration and Installation	3
MT 146	Digital Logic and Microprocessor Fundamentals	4
MT 262	Microcomputer Peripherals and Systems	4
MT 264	Microcomputer Systems Troubleshooting and Repair I	4
MT 267	Microcomputer Systems Troubleshooting and Repair II	4
MT 270	Networks I: Installation, Operation, and Troubleshooting	3
MT 271	Networks II: Installation, Administration, Troubleshooting, and Support	5
	Technical elective*	3
Total credit hours		60

**Choose a course from CA, CS, ET, MG, or NW.*

Microcomputer Technician Certificate Option (G)

This certificate option 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. A certificate is awarded to those who fulfill the curriculum requirements.

MT 100	Electronics for Computers	4
MT 127	Microcomputer Control Programs	3
MT 140	Microcomputer Configuration and Installation	3
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 two courses is designed for persons who wish to develop skills in microcomputer technology that will prepare them to take the A+ certification examination. In order to complete each course in this sequence, students need to 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

FIRE SCIENCE FIRE SERVICE MANAGEMENT (R)–A.A.S.

Statewide Program

See also Fire Protection Engineering Option

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 Writing	.. 3
EN 102	<i>Techniques of Reading and Writing</i>	
or		
EN 109	<i>Writing for Technology and Business</i>	... 3
MG 205	Human Relations in Management	... 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
	General electives: It is suggested that these electives be in the areas of accounting, computer applications, computer science, or stress management.	..... 4

Fire Science Requirements (18 credit hours)

FS 101	Fire Protection Organization	..... 3
FS 104	Fire Service Administration	..... 3
FS 105	Fundamentals of Fire Suppression	... 3

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 112	Building Codes and Construction	... 3
FS 201	Fire Prevention and Inspection	..... 3

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 Strategy	... 3
FS 225	Fire and Arson Investigation	..... 3
FS 226	Advanced Fire and Explosive Investigation	..... 3
FS 250	Fire Protection Internship	..... 3
Total credit hours 60		

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

Fire and Arson Investigation Certificate Option (R)

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 has been designed to be compatible with industry standards. Students may continue working toward the A.A.S. in either fire science or criminal justice.

CJ 110	Administration of Justice	..... 3
CJ 211	Criminal Investigation	..... 3
CJ 222	Criminal Evidence	..... 3
CJ 232	Criminal Forensics	..... 3
EN 101	Techniques of Reading and Writing	... 3
EN 102	Techniques of Reading and Writing	
or		
EN 109	Writing for Technology and Business	... 3
FS 112	Building Codes and Construction	..... 3
FS 225	Fire and Arson Investigation	..... 3
FS 250	Fire Protection Internship	..... 3
PY 102	General Psychology	..... 3
PY 213	Criminal and Legal Psychology	
or		
PY 221	Introduction to Abnormal Psychology	..... 3
Total credit hours 33		

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

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 concentration/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. Concentration/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.mc.cc.md.us/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
	<i>Speech foundation</i>	..... 3

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

	<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)
PE 101-199	Physical education elective*	..... 1

Concentration/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 (R)

Concentrations 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, athletic coaching, athletic training, and sports medicine.

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,

Health Enhancement, Exercise Science, and Physical Education *(continued)*

health promotion, and sports medicine. In response to these changing societal interests and the resulting job market, the Department of Health Enhancement, Exercise Science, and Physical Education offers five concentrations from which students may choose to fulfill their career goals: athletic training/sports medicine, exercise science/health fitness leadership, gerontology, health education, and physical education teacher preparation/coaching.

Each concentration 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 concentration. 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 program 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.

Athletic Training/Sports Medicine (R)–A.A.

Athletic training, a subspecialization of sports medicine, is primarily concerned with the implementation of injury prevention, emergency care, and rehabilitation of injured athletes. The American Medical Association recognizes athletic trainers as allied health professionals who provide a major link between sports programs and the medical community. The major responsibilities of athletic trainers include injury prevention, injury evaluation, administering first aid and emergency care,

rehabilitation and reconditioning, and providing healthful advice and guidance to athletes.

The athletic training curriculum offers an academic foundation and hands-on clinical experiences which partially fulfill the core requirements for certification eligibility of the National Athletic Trainers Association (NATA). A NATA-certified athletic trainer teaches athletic training courses and supervises clinical training. Field-work experiences involve service with the College athletic program and may include participation at physical therapy centers or with high school interscholastic teams.

Opportunities for employment as an athletic trainer include secondary schools, colleges and universities, professional teams, sports medicine clinics, health clubs, and industrial settings. Many public school systems employ athletic trainers both to teach a specific discipline such as physical education and to perform athletic training duties with the interscholastic athletic program.

This concentration is designed for students whose objective after the completion of a baccalaureate degree is to pursue a career as an athletic trainer and teacher of physical education. With departmental approval, the exercise science concentration may be modified to accommodate the student whose primary interest is athletic training. Completion of all requirements for this concentration will lead to the award of the A.A. in arts and sciences.

First Semester

BI	101	General Biology	
	or		
BI	107	Principles of Biology	4
EN	101	Techniques of Reading and Writing*	3
HE	105	First Aid and Basic Life Support	3
PE	203	Overview of Physical Education	3
PE	200–238	Physical education major skills and theory	1 (2)
		<i>Humanities distribution</i>	3

Second Semester

EN	102	Techniques of Reading and Writing	3
HE	101–202	Health elective†	3
		<i>Mathematics foundation</i>	3

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

Athletic Training/Sports Medicine *(continued)*

PE	182	Lifetime Fitness and Wellness (for majors)	2
PE	200–238	Physical education major skills and theory	2
PE	233	Practical Applications in Athletic Training I	1

Third Semester

BI	204	Human Anatomy and Physiology I	4
PE	235	Fundamentals of Athletic Training	3
		<i>Speech foundation</i>	3
		<i>Arts distribution</i>	3
		<i>Behavioral and social sciences distribution‡</i>	3

Fourth Semester

BI	205	Human Anatomy and Physiology II	4
HE	101–202	Health elective	
	or		
PE	200–238	Physical education major skills and theory	
	or	Selected 100-level physical education courses†	2 (3)
PE	234	Practical Applications in Athletic Training II	1
SO	212	Sport in American Society	
	or	<i>Behavioral and social sciences 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 department.

†Students must consult with departmental adviser before selecting electives from PE, HE, or other categories. With permission of the department, two credits of selected 100-level PE courses may be substituted for PE 200–238 major skills courses. Recommended electives include PE 129–138 aquatics electives and PE 174.

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

Exercise Science/Health Fitness Leadership (R)–A.A.

This concentration 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

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

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 curriculum 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.

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.

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

Exercise Science/Health Fitness Leadership (*continued*)

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 physical education 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 physical education 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 physical education 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 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.

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

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

Gerontology (R)—A.A.

This concentration 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 program in gerontology 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, the A.A. has been developed according to standards set by the Association for Gerontology in Higher Education ensuring transferability of credits earned to member institutions.

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

Gerontology (*continued*)

First Semester

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

Second Semester

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

Third Semester

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

Fourth Semester

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

Total credit hours 61

Health Education (R)—A.A.

This concentration 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

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

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.

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

First Semester

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

Second Semester

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

Third Semester

BI 204	Human Anatomy and Physiology I	4
PE 182	Lifetime Fitness and Wellness	
or		
	Health electives‡	5 (6)
	Arts distribution	3
	Humanities distribution	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.

Physical Education Teacher Preparation/Coaching (R)–A.A.

This concentration 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 concentration 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.

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

First Semester

BI 101	General Biology	
or		
BI 107	Principles of Biology	4
EN 101	Techniques of Reading and Writing*	3
HE 105	First Aid and Basic Life Support	
or		
HE 107	First Aid and Safety in the Home, School, and Community	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	Techniques of Reading and Writing	3
HE 101	Personal and Community Health	3
	Mathematics foundation	3
PE 213-238	Physical education major skills and theory†	2
	Speech foundation	3

Third Semester

BI 204	Human Anatomy and Physiology 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)
	Behavioral and social sciences distribution‡	3
	Humanities distribution	3

Fourth Semester

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

Personal Training Certificate (R)

The personal training certificate 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

Personal Training Certificate (continued)

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

BI 204	Human Anatomy and Physiology I*	
or		
BI 131	Human Structure and Function I	4
BI 205	Human Anatomy and Physiology II*	
or		
BI 132	Human Structure and Function II†	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.

†Prerequisite BI 131 or consent of Biology Department.

‡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.

CURRICULA

HEALTH INFORMATION TECHNOLOGY (formerly Medical Record Technology) (TP)–A.A.S.

Statewide Program

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 the Accreditation of Allied Health Education Programs (CAAHEP) 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 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.

Health Information Technology (continued)

A suggested course sequence for full-time students follows. Part-time students must see the program coordinator to choose an appropriate sequence of courses as outlined in the *Health Information Technology Student Handbook*.

General Education and Other Requirements (34 credit hours)

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

Health Information Technology Requirements (36 credit hours)

HI 100	Introduction 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

Medical Coder/Abstractor Certificate Option (TP)

The medical coder/abstractor certificate option 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.

BI 204	Human Anatomy and Physiology I	4
BI 205	Human Anatomy and Physiology II	4
EN 101	Techniques of Reading and Writing	3
HI 103	Assembly and Analysis and Alternate Health Care Delivery	2
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 213	CPT-4 Coding	2
HI 214	Introduction to Pharmacology	1
HI 220	Coding, Abstracting, and Indexing II	3
	Total credit hours	30

Medical Coder/Abstractor/Biller Certificate Option (TP)

The medical coder/abstractor/biller certificate option 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

Medical Coder/Abstractor/Biller Certificate Option (continued)

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.

BI 204	Human Anatomy and Physiology I	4
BI 205	Human Anatomy and Physiology II	4
EN 101	Techniques of Reading and Writing	3
HI 103	Assembly and Analysis and Alternate Health Care Delivery	2
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 213	CPT-4 Coding	2
HI 214	Introduction to Pharmacology	1
HI 220	Coding, Abstracting, and Indexing II	3
HI 221	Ambulatory Care Coding	2
HI 222	Electronic Patient Billing	2
	Total credit hours	34

HOSPITALITY MANAGEMENT (R)-A.A.S.

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 Writing	3
	<i>Health foundation</i>	1 (3)
HM 101	Introduction to the Hospitality Industry	3
	<i>Mathematics foundation</i>	3
MG 101	Principles of Management	3
	<i>Speech foundation</i>	3

Second Semester

	<i>English foundation</i>	3
FM 103	Introduction to Nutrition	3

FM 105	Food Service Sanitation	1
FM 107	Food and Beverage Management	3
HM 143	Hotel Front Office Management	3
	<i>Natural sciences lab distribution*</i>	4

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 Option (R)

This course of study is designed for students seeking employment in the food industry. The program 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
MA 107	Business Mathematics	3
MG 100	Managing Diversity in the Workplace	3
	Hotel/motel management or management elective	3
	Total credit hours	32

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

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

Meeting and Conference Planners Certificate Option (R)

This program of study involves the growing field of meeting planning. The core of the program provides the student with a background in food and beverage management and costs. Additionally, the student will learn the legal aspects of lodging and food services and the marketing of those services. The core of the program will conclude with a course in meeting and conference operations. The student will also be required to take general education requirements selected to enhance the knowledge of the core program.

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
MA 107	Business Mathematics	...3
MG 102	Principles of Supervision	...3
MG 121	Introduction to Marketing	...3

Total credit hours 33

INTERIOR DESIGN—PREPROFESSIONAL (R)—A.A.

This transfer concentration offers beginning college-level courses for students who desire to continue study toward an advanced interior design degree. Student competency will include fundamental design, drawing, color, space planning, floor treatments, and professional business practices for interior designers. Technical development will include basic knowledge of drafting, construction and building systems, and presentation techniques for interior designers. Completion of all requirements for this concentration 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 adviser in the interior design program.

First Semester

AR 101	<i>Drawing I</i>	...3
AR 103	<i>Design I</i>	...3
CT 181	Architectural Drafting Techniques	...3
EN 101	Techniques of Reading and Writing	...3
ID 101	Interior Design I	...3
	<i>Mathematics foundation</i>	...3

Second Semester

AR 105	Color	...3
	<i>English foundation</i>	...3
ID 102	Interior Design II*	...3
ID 210	History of Furniture and the Decorative Arts	...3
	<i>Behavioral and social sciences distribution</i>	...3
	<i>Humanities distribution</i>	...3

Third Semester

AR 107	Art History I	
	or	
AR 209	History of Architecture I	...3
ID 207	Presentation Techniques for Interior Design*	...3
ID 221	Interior Design III*	...3
	<i>Behavioral and social sciences distribution</i>	...3
	<i>Natural sciences lab distribution†</i>	...4

Fourth Semester

AR 108	Art History II	
	or	
AR 210	History of Architecture II	...3
	<i>Health foundation</i>	...1
ID 222	Interior Design IV*	...3
ID 260	Business Practices and Procedures for Interior Design*	...3
SP 108	Fundamentals of Speech	...3
	<i>Natural sciences non-lab distribution</i>	...3

Total credit hours 68

*ID 102, 207, 221, 222, and 260 are offered in alternate semesters; ID 207 and 221 are only offered during the fall semester; ID 102, 222, and 260 are only offered during the spring semester. ID 101 is offered every semester.

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

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

INTERIOR DESIGN—PREPROFESSIONAL (R)—A.A.S.

This option offers students preparation for entry-level positions in the interior design and architecture professions. Student competency will include fundamental design; drawing; color; space planning; history of art or architecture and furniture; 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; structural, mechanical, and electrical systems; and 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 adviser in the interior design program.

First Semester

AR 101	Drawing I	...3
AR 103	Design I	...3
CT 181	Architectural Drafting Techniques	...3
EN 101	Techniques of Reading and Writing	...3
ID 101	Interior Design I	...3
	<i>Mathematics foundation</i>	...3

Second Semester

AR 105	Color	...3
	<i>English foundation</i>	...3
ID 102	Interior Design II*	...3
ID 210	History of Furniture and the Decorative Arts	...3
	Elective†	...3

Third Semester

AR 107	Art History I	
	or	
AR 209	History of Architecture I	...3
CG 120	Computer Graphics: Art and Illustration I	...4
ID 207	Presentation Techniques for Interior Design*	...3
ID 221	Interior Design III*	...3
MG 123	Textiles	...3
	<i>Behavioral and social sciences distribution</i>	...3

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

Fourth Semester

AR 108	Art History II	
	or	
AR 210	History of Architecture II	...3
HE 100	Principles of Healthier Living	...1
ID 222	Interior Design IV*	...3
ID 260	Business Practices and Procedures for Interior Design*	...3
SP 108	Fundamentals of Speech	...3
	<i>Natural sciences lab distribution‡</i>	...4

Total credit hours 69

*ID 102, 207, 221, 222, and 260 are offered in alternate semesters; ID 207 and 221 are offered during the fall semester; ID 102, 222, and 260 are offered during the spring semester. ID 101 is offered every semester.

†Students should consult with a departmental adviser before selecting the elective.

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

LANDSCAPE TECHNOLOGY (G)—A.A.S.

This program, leading to the A.A.S., provides the student with a comprehensive mixture of academic and practical training in the field of ornamental horticulture. This flexible curriculum has options to accommodate career interests in either landscape contracting or design. Within these options, 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 (land-

Landscape Technology (*continued*)

scape 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 Option (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. Options are provided for students who desire training in either landscape contracting or landscape design. Students may enter the job market immediately upon completion of the certificate or apply earned credits toward an A.A.S. in landscape technology.

Selected courses in this program 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 Technology Certificate Option (*continued*)

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)	

LEGAL ASSISTANT

See *Paralegal Studies*

LIBERAL ARTS AND SCIENCES

The following patterns are outlined 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 these concentrations 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.

Majors in international affairs and public affairs should include EC 201 and EC 202, HS 201 and HS 202, mathematics or science, PS 101, PS 121, PS 201, and PS 203. Substitute electives include statistics, economic geography, economic history, sociology, history, philosophy, psychology, and political science. Geography should be elected by those students planning to go into foreign affairs or international affairs.

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 Concentration–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 Writing	3
	<i>Health foundation</i>	1 (3)
HS 151	History of Europe	3
PS 101	<i>American Government</i>	3
	<i>Speech foundation</i>	3
	<i>Foreign language</i>	3
	Student development elective (optional)	1

Second Semester

EN 102	<i>Techniques of Reading and Writing</i>	3
HS 161	History of Europe	3
	<i>Mathematics foundation</i>	3
PE 101–199	Physical education elective	1
PY 102	<i>General Psychology</i>	3
	<i>Foreign language</i>	3

Third Semester

PE 101–199	Physical education elective	1
SO 101	Introduction to Sociology	3
	<i>Arts distribution</i>	3
	<i>Natural sciences lab distribution</i>	4
	<i>Foreign language</i>	3
	<i>Literature elective*</i>	3

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

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

Arts Concentration (*continued*)

Fourth Semester

PE 101–199	Physical education elective	.....1
PL 201	Introduction to Philosophy	.....3
	Elective	.....3
	Foreign language	.....3
	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 Concentration–A.A.

The international studies concentration 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 program 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 concentration. The international studies concentration includes the General Education requirements as well as a number of alternate course choices (listed in the footnotes), which serve to prepare the student for particular transfer options in international studies, such as international relations and area studies.

Students may elect to study abroad for a semester or travel in a foreign country during the summer as part of the international studies program. 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 Writing	.....3
GE 101	<i>Introduction to Geography</i>	.....3
	<i>Health foundation</i>	.....1
PS 101	American Government	.....3
	Foreign language	.....3

Second Semester

EN 102	Techniques of Reading and Writing	.....3
HS 116		
	<i>or</i>	
HS 117	World History: A Comparative Survey	.....3
	<i>MA 110 or higher</i>	.....3
PS 203	International Relations	.....3
	Foreign language	.....3

Third Semester

EC 105	Basic Economics†	.....3
EN 201		
	<i>or</i>	
EN 202	Introduction to World Literature‡	.....3
PS 201	Major Foreign Governments	.....3
	<i>Arts distribution</i>	.....3
	<i>Natural sciences lab distribution</i>	.....4

Fourth Semester

PL 201	Introduction to Philosophy**	.....3
PS 121	Political Ideologies	
	<i>or</i>	
PS 250	Introduction to International Conflict Resolution	.....3
HS 203	<i>Latin American History</i>	
	<i>or</i>	
HS 207	<i>East Asian Civilization</i>	
	<i>or</i>	
HS 208	<i>Modern Asia</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 202, GE 102, GE 103, GE 104, GE 201, PS 121, PY 102, SO 105.

‡Alternates: EN 213, EN 214, EN 215, HS 205, HS 214, third foreign language course.

**Alternates: HS 114, HS 203, HS 207, HS 208, HS 210, a third or fourth foreign language course.

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

Science or Mathematics Concentration–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 Writing	.....3
	<i>Health foundation</i>	.....1 (3)
	<i>Mathematics foundation*</i>3
PE 101–199	Physical education elective	.....1
	<i>Natural sciences lab distribution</i>	.....4
	<i>Foreign language†</i>	.....3
	Student development elective (optional)	.....(1)

Second Semester

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

Third Semester

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

Fourth Semester

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

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

MANAGEMENT

This flexible curriculum has options to accommodate career interest in management, marketing, and institutional administration and includes courses 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. Career or transfer goals are facilitated by the selection of one of the development options listed below or by consulting with an academic adviser.

General Management Option–A.A.S.

This option prepares students for an understanding of management principles, concepts, and organizational operations. Completion of all requirements for this option 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
	<i>Health foundation</i>	.....1 (3)
	<i>Mathematics foundation</i>	.....3
MG 101	Principles of Management	.....3
	<i>Arts or humanities distribution</i>	.....3
	Computer applications elective	.....3

Second Semester

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

Third Semester

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

General Management Option *(continued)*

Fourth Semester

MG 202	Business Law II	3
	<i>Natural sciences lab distribution</i>	4
	Management electives*	9

Total credit hours 60 (62)

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

General Management Certificate Option

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

EN 101	Techniques of Reading and Writing . . .	3
MA 107	Business Mathematics	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
	Management elective†	3

Total credit hours 30

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

Diversity Management Letter of Recognition

This sequence of three courses is designed for persons who wish to develop skills in diversity management. In order to complete each course in this sequence, students need to 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 Dis-

abilities 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 Option (G,R)

The diversity training certificate program provides students with the knowledge and techniques for managing a diverse workforce. The certificate program 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

Human Resources Management Certificate Option (G,R)

This option 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. The purpose is to provide the opportunity for students to complete a certificate program. This certificate can be applied to the general management option 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
	Management elective	3

Total credit hours 30

Marketing Option (R)–A.A.S.

The marketing option 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. Completion of all requirements for this option 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
	<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	
EC 201	Principles of Economics I	3
	<i>English foundation</i>	3
MG 106	Principles of Retailing	
or		
MG 110	Small Business Management	3
	Computer applications or computer science elective	3

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
	<i>Arts or humanities distribution</i>	3
	<i>Natural sciences lab distribution</i>	4
	Management elective	3
	Total credit hours	63 (65)

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

Marketing Certificate Option (R)

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

EN 101	Techniques of Reading and Writing . . .	3
MA 107	Business Mathematics*	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 33 (34)

*Or any higher numbered mathematics course.

†MG 101 is the prerequisite for all management courses.

Merchandising Option (R)–A.A.S.

This option 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 option 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. Completion of all requirements for this option 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.

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

Merchandising Option (*continued*)

First Semester

EN 101	Techniques of Reading and Writing . . . 3
	<i>Health foundation</i>1 (3)
MG 101	Principles of Management3
MG 109	Consumer Behavior3
MG 121	Introduction to Marketing3
	<i>Speech foundation</i>3

Second Semester

	<i>English foundation</i>3
	<i>Mathematics foundation</i>3
MG 105	Principles of Selling3
	Computer applications or computer science elective3
	Management elective*3

Third Semester

MG 106	Principles of Retailing3
MG 206	Principles of Advertising3
	<i>Arts or humanities distribution</i>3
	<i>Natural sciences lab distribution</i>4
	Management elective3

Fourth Semester

AC 201	Principles of Accounting I4
MG 205	Human Relations in Management 3
MG 210	Field Experience or Practicum3
	<i>Behavioral and social sciences distribution</i>3
	Management elective3

Total credit hours 63 (65)

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

Public Management Option (G,R)–A.A.S.

This option 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. Completion of all the requirements for this option will lead to the award of the A.A.S.

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 Management3

PS 101	American Government3
	Computer applications or computer science and technologies elective . . . 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 Supervision3
PS 102	State and Local Government3
	<i>Speech foundation</i>3

Third Semester

MG 201	Business Law I3
MG 204	Human Resources Management3
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 Practicum3
PS 260	Politics in Action3
	<i>Natural sciences lab distribution</i>4
	Management electives6

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 demonstrate an understanding of the legal requirements concerning employer/employee relations; application of the legal framework for labor/management relations; and understanding 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 Management3
MG 102	Principles of Supervision3
MG 207	Legal Issues in Labor Management . . . 3

Total credit hours 9

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

MEDICAL RECORD TECHNOLOGY (TP)

See Health Information Technology

MENTAL HEALTH ASSOCIATE (TP)–A.A.S.

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.

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.

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

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 I3
MH 112	Group Dynamics I3
PY 102	General Psychology3

Second Semester

	<i>English foundation</i>3
	<i>Mathematics foundation</i>3
MH 102	Introduction to Mental Health II3
MH 213	Group Dynamics II3
PY 221	Introduction to Abnormal Psychology . 3
	Elective1

Third Semester

MH 200	Practicum, Fieldwork in Mental Health/Human Services6
MH 208	Activities Therapies3
	<i>Arts or humanities distribution</i>3
	<i>Natural sciences lab distribution</i>4

Fourth Semester

MH 200	Practicum, Fieldwork in Mental Health/Human Services6
	<i>Speech foundation</i>3
	<i>Behavioral and social sciences distribution</i>3
	Psychology elective3

Total credit hours 60

MUSIC (R)–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.

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.

Music *(continued)*

Department Requirements

1. Students 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.

4. To gain additional ensemble experience, all applied music students are required by the department to register each semester for chamber and small ensembles.

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

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 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 should 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
MU 123	Music Theory I (<i>arts distribution</i>)	3
MU 124	Ear Training/Sightsinging I	2
	<i>Behavioral and social sciences distribution</i>	3
	Major ensemble (MU 161, 171, or 172)	1

Second Semester

EN 102	<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

	<i>Behavioral and social sciences distribution</i>	3
	Major ensemble (MU 161, 171, or 172)	1

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
	<i>Arts or humanities distribution</i>	3
	<i>Natural sciences lab distribution</i>	4
	Major ensemble (MU 161, 171, or 172)	1

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 Option (R)

The music certificate 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.

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

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

NETWORK ENGINEERING (G)—A.A.S.

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 courses leading to the award of the A.A.S. include 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 your 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 136	Systems Analysis and Design	3
MT 127	Microcomputer Control Programs	3
MT 140	Microcomputer Configuration and Installation	3
CS 111	Basic Programming	
or		
CS 140	Introduction to Programming	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

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	5
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

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

Network Engineering (continued)

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 Option (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.

Completion of 21(23) credit hours leading to the award of the certificate includes 15 credits of required fundamental courses and 6–8 credits of electives that meet the program specifications.

Fundamental Requirements (15 credit hours)

NW 100	Introduction to Networking3
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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
NW 201	Internetworking Microsoft TCP/IP on Microsoft Windows NT 4.0
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

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 . . . . .	.5
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 . . . . .	.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 MCP Track 2:

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 Option (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.

Network Engineer Certificate Option (continued)

Completion of courses leading to the award of the certificate include 36 credit hours of courses, with 30–33 required credits and 3–6 credits of selected electives that meet the program specifications.

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 136	Systems Analysis and Design3
MT 127	Microcomputer Control Programs3
MT 140	Microcomputer Configuration and Installation3
CS 111	Basic Programming	
or		
CS 140	Introduction to Programming3
NW 100	Introduction to Networking3

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
NW 201	Internetworking Microsoft TCP/IP on Microsoft Windows NT 4.0
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 (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 . . . . .	.5
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 (TP)–A.S.

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. 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 clinical 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. For additional information, contact the Admissions Office at the Takoma Park Campus, 301-650-1501, or the program department.

All students must have CPR certification for health care providers as well as a TB test or chest X-ray showing no evidence of tubercular disease. Additionally, clinical agencies require Hepatitis B vaccination for students for clinical practice. For varicella (chicken pox), clinical agencies are requiring *knowledge* of immune sta-

tus + or - on record; they may not require the vaccine but will counsel persons who do not have it.

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
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
	<i>Mathematics foundation</i>	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

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

[†]Students should check prerequisites for BI 203, BI 204, and EN 102.

PARALEGAL STUDIES (G,TP)–A.A.S.

This curriculum is designed for those who wish to pursue 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.

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
PS 101	American Government	3
	<i>Behavioral and social sciences distribution</i>	3
	Legal assistant elective	3

Third Semester

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

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
	<i>Arts or humanities distribution</i>	3
	Legal assistant elective or CJ 221	3
	Total credit hours 63 (65)	

Paralegal Studies Certificate Option (G,TP)

Developed in cooperation with members of the Montgomery County Bar Association, this evening program 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

Paralegal Studies Certificate Option
(continued)

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 program designed for working people who may take only one or two courses per semester; thus, the program 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. In order to complete each course in this sequence, students need to 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 (R)–A.A.S.

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.

For other related curricula offered by the Visual Communications Technologies Department, see Advertising Art (pp. 66–68) and Communication and Broadcasting Technology (pp. 82–84).

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
PG 150	Photography I	.....3
TR 104	Media Appreciation	.....3
	<i>Natural sciences lab distribution</i>	.....4

Second Semester

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

Third Semester

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

Fourth Semester

PG 265	Color Materials and Processes	.....3
PG 275	Business Practices and Portfolio Development	.....3
	Advertising art, art, or photography elective*	.....3
	Photography elective*	.....3
	Elective	.....3

Total credit hours 61

*Choice of electives must be approved by a photography adviser.

Electronic Photography Certificate Option (R)

This certificate option 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 Option (R)

This certificate option 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

Photography Master Certificate Option (R)

This certificate option 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
	Photography 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 Option (R)

This certificate option 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 Option (R)

This certificate option 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 (TP)-A.A.S.

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 Physical Therapist Assistant State Licensure examination, given by the state of Maryland or other states.

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

First Semester

BI 204	Human Anatomy and Physiology I*	4
EN 101	Techniques of Reading and Writing	3

HE 107	First Aid and Safety in the Home, School, and Community	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	General Psychology	3

Second Semester

BI 205	Human Anatomy and Physiology II	4
EN 102	Techniques of Reading and Writing	3
PT 105	Kinesiology	3
PT 109	Therapeutic Procedures II	4
PT 112	Pathology for the Physical Therapist Assistant	2

Third Semester

PT 201	Mathematics foundation	3
PT 201	Medical Reporting for the Physical Therapist Assistant	3
PT 207	Therapeutic Procedures III	5
PY 203	Human Growth and Development during the Lifespan	3
SP 108	Fundamentals of Speech	3

Fourth Semester

PT 211	Rehabilitation Procedures	5
PT 212	Psychological Aspects of Therapy for the Physical Therapist Assistant	3
PT 213	Therapeutic Procedures IV	2
PT 214	Clinical Practicum	5
	Arts or humanities distribution	3

Total credit hours 68

*Students are encouraged to complete BI 204 prior to enrolling in PT courses.

PRE-DENTISTRY-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 curriculum 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.

Pre-Dentistry (continued)

First Semester

BI 107	Principles of Biology	4
CH 101	Principles of Chemistry I	4
EN 101	Techniques of Reading and Writing	3
	Health foundation	1
MA 180	Precalculus*	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
	Arts or humanities distribution†	3

Third Semester

CH 203	Organic Chemistry I	5
PH 203	General Physics I	4
	Arts distribution	3
	Behavioral and social sciences distribution	3
	Humanities distribution†	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
	Behavioral and social sciences distribution	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-A.A.

The pre-medical technology curriculum 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 curriculum 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	Principles of Biology I	4
CH 101	Principles of Chemistry I	4
EN 101	Techniques of Reading and Writing	3
MA 110	Survey of College Mathematics*	3
PE 101-199	Physical education elective	1

Second Semester

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

Third Semester

SP 108	Fundamentals of Speech	3
	Arts or humanities distribution	3
	Behavioral and social sciences distribution	3
	Biology elective*	4
	Chemistry elective	4 (5)

Pre-Medical Technology (*continued*)**Fourth Semester**

<i>Behavioral and social sciences distribution</i>	3
<i>Humanities distribution</i>	3
Biology elective*	4
Chemistry elective*	5

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–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 curriculum 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 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–A.A.

The pre-optometry curriculum 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 curriculum 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)

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

EN 102	<i>Techniques of Reading and Writing</i>	3
PE 101–199	Physical education elective	1
	Biology elective†	4
	Chemistry elective‡	4
	Mathematics elective*	3 (4)

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–A.A.

This curriculum 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 curriculum 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

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 (R)–A.A.S.

The aim of the printing management curriculum is to produce graduates with an understanding of the technical aspects of the printing industry and with a general business knowledge that may lead to eventual employment in managerial or supervisory 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 260	Desktop Publishing I	.....3
EN 101	Techniques of Reading and Writing	...3
	<i>Mathematics foundation</i>	.....3
PR 117	Graphic Arts Photography I	.....3
PR 118	Stripping and Platemaking I	.....3

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 231	Electronic Imaging Tools—Scanned Image Prepress Applications	.....3
	<i>Arts or humanities distribution</i>	.....3

Third Semester

MG 102	Principles of Supervision	.....3
PR 212	Planning and Estimating	.....3
PR 230	Electronic Imaging	.....3
	<i>Natural sciences lab distribution</i>	.....4
	Printing technology elective	.....3

Fourth Semester

	<i>Health foundation</i>	.....1
PR 115	Introduction to Bindery and Finishing	...3
PR 221	Production Management	.....3
PR 278	Special Topics in Printing Technology	.....3
or		
PR 281	Printing Internship*	.....3 (4)
	<i>Speech foundation</i>	.....3
	<i>Behavioral and social sciences distribution</i>	.....3
	Total credit hours	60 (61)

*PR 278 and PR 281 suffixes: A=1 credit, B=2 credits, C=3 credits, D=4 credits.

Electronic Imaging Prepress Certificate Option (R)

This certificate option 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 certificate option 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.

CA 100	Keyboarding Fundamentals	.....1
CA 260	Desktop Publishing I	.....3
PR 230	Electronic Imaging	.....3
PR 231	Electronic Imaging Tools—Scanned Image Prepress Applications	.....3
PR 232	Scanned Image Retouching	.....3
	Professional electives*	.....3 (4)
	Total credit hours	16 (17)

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

Printing Technology Certificate Option (R)

This certificate option is designed to provide skills, knowledge, and related experiences needed for entry-level jobs in the graphic arts/printing industry. This option may also be used by those people currently employed in related fields to expand or upgrade skills to enhance their employment capabilities. The program requires 25–26 credit hours and is designed to be completed by employed students in four semesters. Students may apply credits earned in the certificate option to the associate’s degree. The certificate will be awarded upon successful completion of the specified requirements.

Printing Technology Certificate Option (continued)

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.

RADIOLOGIC (X-RAY) TECHNOLOGY (TP)–A.A.S. Statewide Program

This curriculum requires a minimum of two years of didactic and clinical experience. It offers a basic general education as well as an in-depth study of radiologic technology, 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	Human Anatomy and Physiology 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	Human Anatomy and Physiology II	.....4
HI 128	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 III4
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Third Semester

EN 101	Techniques of Reading and Writing	...3
PY 102	General Psychology3
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	Techniques of Reading and Writing	.....3
or		
EN 109	Writing for Technology and Business	.....3
RT 202	Radiologic Technology IV	.....3
RT 222	Clinical Radiology V	.....3
	<i>Speech foundation</i>	.....3

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.

SURGICAL TECHNOLOGIST (TP)—A.A.S.

Effective Fall 2001 Pending Approval

This curriculum 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. This program will be part of the health sciences curricula at the Takoma Park Campus.

Admission to the program is selective. For information regarding the program and admissions, please call the Office of Admissions at the Takoma Park Campus at 301-650-1501.

TEACHER EDUCATION

Students planning to transfer to a teacher education program at a four-year college or university in the state of Maryland should consult ARTSYS, the computerized transfer system available in Student Development at any of Montgomery College's campuses, to determine which courses to take prior to transfer. Students may incorporate courses required for transfer into the general studies curriculum if they wish to complete an associate's degree before transferring. Students planning to transfer to a four-year college or university outside Maryland should contact that institution for more information on course selection.

TECHNICAL WRITING CERTIFICATE (G)

Statewide Program

This certificate program 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 program.

CA 172	Internet and Data Communications	
or		
	Computer applications or computer science elective	.3
CA 161	Desktop Publishing I	
or		
CG 120	Computer Graphics: Art and Illustration I	.4
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

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 program concentrations are offered: dance, theatre performance, and theatre technical. Completion of all requirements for any one of the concentrations will lead to the award of the A.A. in arts and sciences.

Dance (R)—A.A.

This concentration 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.

Dance (continued)

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
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
	Dance elective†	.2

Fourth Semester

DN 101-207	Dance technique*	.6
SP 108	Fundamentals of Speech	.3
	<i>Arts or humanities distribution</i>	.3
	<i>Natural sciences non-lab or lab distribution</i>	.3 (4)
	Dance elective†	.3
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)—A.A.

This concentration 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

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 distribution</i>	.3 (4)

Fourth Semester

TH 117	Fundamentals of Play Directing	.3
TH 120	Performance Production	.1
TH 219	History of Theatre I	.3
	<i>Behavioral and social sciences distribution</i>	.3
	Dance or physical education elective(s)*	.3
	Technical theatre elective†	.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)–A.A.

This concentration 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
TR 230	Organization and Administration for the Performing Arts	3
	<i>Humanities distribution</i>	3
	<i>Natural sciences non-lab or lab distribution</i>	3 (4)
	Technical theatre elective	3
	<i>Behavioral and social sciences distribution</i>	3

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
	<i>Behavioral and social sciences distribution</i>	3
	Technical major elective(s) [†]	6
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.