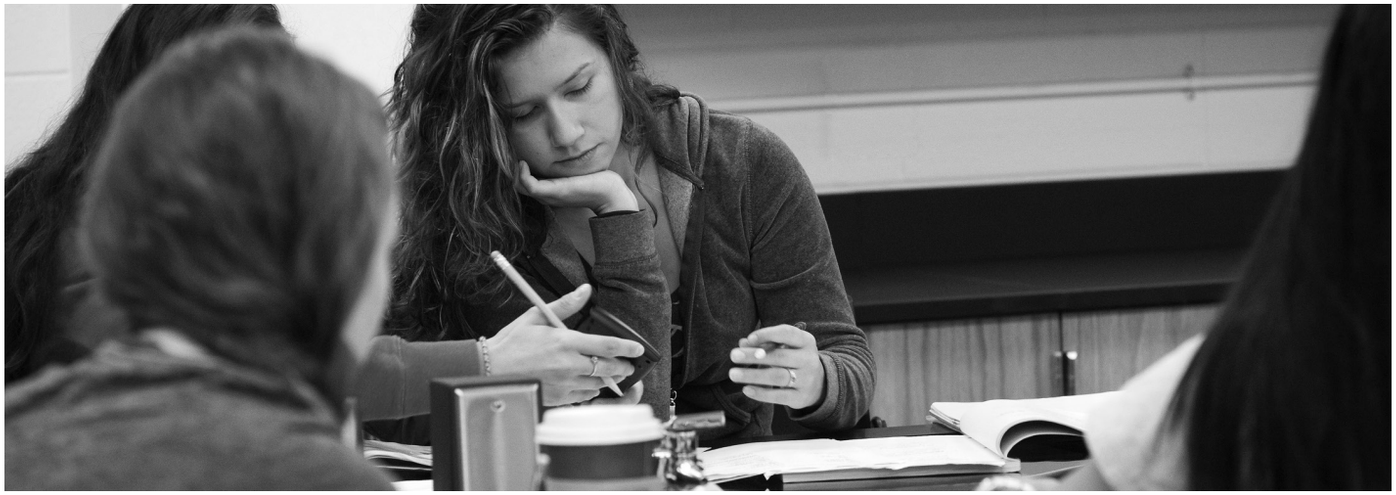
Programs of Study



Aviation Flight Technology

Associate in Applied Science Degree

The Aviation Flight Technology program provides the course work and flight training necessary for an entry-level flight position. This program is designed to provide students with a broad academic background as well as an opportunity to master the specific requirements of the Commercial Pilot Certificate (Single-Engine Land) with an Instrument Rating, the minimum certificate required to fly as a professional pilot. The mix of course work and flight training courses offers a student the option to continue the process of earning additional ratings and accumulating flight hours at four-year aviation institutions or earning a four-year degree for a position in a related field.

Through this program, pilots interested in earning a college degree can earn college credits for certificates and ratings already completed.

General Education Foundation (20 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3 CR)		
Mathematics Elective		3
Social Science (3 CR)		
General Psychology	PSY 113	3
General Education Electives (8 CR)		
Physics Elective		4
Meteorology	PHY 118	4
Total General Education Credits		**20**

Aviation Flight Technology Core (42/43 CR)

Introduction to Aviation	AVT 101	1
Flight Operations I (Ground School)	AVT 110	3
Flight Training IA (Private Pilot Cert.)	AVT 111	1
Flight Training IB (Private Pilot Cert.)	AVT 112	1
Aerodynamics	AVT 118	3
Flight Training IIA	AVT 121	1
Flight Training IIB	AVT 122	1
Flight Operations Instrument (Ground School)	AVT 208	3
Flight Training IIIA	AVT 201	1
Flight Training IIIB	AVT 202	1
Flight Training IIIC	AVT 203	1
Flight Operations Commercial (Ground School)	AVT 215	3
Flight Training IVA	AVT 211	1
Flight Training IVB	AVT 212	1
Restricted Electives		9/10
Free Elective		9
Lifetime Wellness	HED 128	2
Total Core Credits		**42/43**

Total Program Credits **62/63**

Flight training is broken into 1-credit segments. These are self-paced courses that require successful completion before progressing to the next level of training. Course fee covers flight training cost. Students enrolled in these courses are required to purchase accident liability and aircraft damage liability insurance.

Biotechnology

Associate in Applied Science Degree

Note: Biotechnology students requiring remediation in algebra must complete MAT 016 Intermediate Algebra prior to taking courses in Biology and Chemistry.

The Biotechnology program is accredited by the American Chemical Society, Chemical Technology Program Approval Service (CTPAS).

Biotechnology, the most rapidly growing sector in the field of biology and a major industry in New Jersey, is the application of the basic principles of the life sciences in the study of plants, animals, microbes, tissues, cells, biological molecules or a product that has a biological process attached to it. Students learn modern biotechnology methods and instrumentation and graduate with both theoretical knowledge and practical training and an Associate in Applied Science degree. Students are equipped with state-of-the-art skills including DNA fingerprinting, genetic engineering and HPLC, and are able to work directly in research and pharmaceutical laboratories, molecular genetics, cosmetic/personal care product laboratories, biochemical, and food or animal care facilities. Graduates qualify for positions as biotechnology technicians, staff technologists, research assistants, microbiologists, histologists or cosmetic laboratory technologists. Students can make a choice for either direct employment and/or transfer to a four-year institution for a baccalaureate degree in biology or related scientific disciplines. Courses in this program are also ideal for retraining purposes.

Our Cooperative Education program (co-op) provides students the opportunity to gain valuable, practical skills working in industry as part of their educational experience.

General Education Foundation (20 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3 CR)		
Statistics	MAT 124	3
Social Science or Humanities (3 CR)		**3**
Choose from General Education course list		
General Education Electives (8 CR)		**8**
Choose from General Education course list		
Total General Education Credits		**20**

Biotechnology Core (44 CR)

General Chemistry I Lecture	CHM 125	3
General Chemistry I Lab	CHM 126	1
General Chemistry II Lecture	CHM 127	3
General Chemistry II Lab	CHM 128	1
Cell Biology (Fall)	BIO 123	4
Microbiology	BIO 215	4
Biochemistry (Spring)	CHM 212	4
Essentials of Organic Chemistry (Summer)	CHM 210	4
Instrumental Methods of Analysis (Spring)	CHM 220	5
Concepts of Physics	PHY 103	4
Technical Elective		4
Free Electives		5
HED or HES Elective		2
Total Core Credits		**44**

Total Program Credits **64**

Due to continual program revisions mandated by the accrediting agencies and/or changes in state mandated requirements, students should consult their academic advisors when selecting courses.

Science courses completed by students prior to entering the Biotechnology program must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

Business Administration

Associate in Science Degree

This program is designed to meet the needs of students who wish to earn a baccalaureate degree in some area of business administration upon completing two additional years at a four-year institution. The curriculum prepares students for upper college-level specialization in finance, management, private or public accounting and marketing.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

General Education Foundation (31 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math/Science/Technology (10 CR)		
Restricted Math Elective		3
Restricted Math Elective		3
Laboratory Science Elective		4
Social Science (3 CR)		
Principles of Economics I	ECO 211	3
Humanities (6 CR)		
History Elective		6
General Education Electives (6 CR)		**6**
Language Survey or Literature Sequence		
Total General Education Credits		**31**

Continued on next page

Business Core (33CR)		
Principles of Accounting I	ACC 111	3
Principles of Accounting II	ACC 112	3
Introduction to Business	BUS 112	3
Principles of Management	BUS 215	3
Business Information Systems	BUS 119	3
Principle of Marketing I	MKT 113	3
Principles of Economics II	ECO 212	3
Business Electives		9
Free Electives		3
Total Core Credits		**33**
Total Program Credits		**64**

Finance

A Certificate of Achievement within Business Administration

The 12-credit Certificate of Achievement in Finance, offered through the Business Administration department, includes three required courses: Money and Banking, Principles of Finance and Investment Principles. It also includes one elective course from the following list: Investment Analysis, Personal Finance or Introduction to International Business.

The certificate in Finance takes a practical approach to the subject matter, providing broad exposure to the stock and bond markets, money and capital markets, financial management, financial planning and financial analysis while improving financial decision-making abilities. By gathering financial information and analyzing trends, students experience a practical hands-on approach to learning about finances.

Students learn about the financial health of a firm, recognize the role and effects of money on the financial system, study investment alternatives offered in the securities market, analyze investment portfolios, learn how to effectively manage personal assets, and understand the role of the global marketplace in business and financial decisions. This combination provides a broad, comprehensive investigation of various aspects of the financial marketplace.

Core Courses (9 CR)		
Money and Banking	BUS 211	3
Principles of Finance	BUS 212	3
Investment Principles	BUS 218	3
Elective Courses (3 CR)*		
Students must select one course from the following:		
Introduction to International Business	BUS 135	3
Personal Finance	BUS 136	3
Investment Analysis	BUS 235	3
Total Certificate Credits		**12**

**Students should consult their academic advisors when selecting this course.*

Small Business Management

A Certificate of Achievement within Business Administration

The Small Business Management Certificate of Achievement, offered through the Business Administration department, is a 12-credit certificate program that includes three required courses: Elements of Accounting, Small Business Planning and Finance, and Small Business Operations. It also includes an elective course, either Customer Relations or Advertising. The certificate provides a broad, comprehensive introduction and study of the essential components of starting and running a small business. It culminates in a capstone course, Small Business Operations that incorporates all aspects of the certificate's learning. The Small Business Management Certificate takes a practical, hands-on approach to small business by providing an up-to-date foundation by exploring current planning, financing, accounting, advertising, customer relations and management concepts.

Elements of Accounting	ACC 110	3
Small Business Planning & Finance	BUS 240	3
Small Business Operations	BUS 219	3
Elective Courses		
Select one course from the following:		
Customer Relations	BUS 242	3
Advertising	MKT 218	3
Total Certificate Credits		**12**

Business Career

Associate in Applied Science Degree

This career-oriented curriculum is designed to meet the basic requirements of those who wish to explore the various areas of business. This program may also be used to further the general and specialized skills of those already employed.

The curriculum is not designed with transfer as the desired objective. However, many courses in the program are accepted by baccalaureate-level colleges. Graduates have a fundamental knowledge of business principles, procedures and systems, and a broad background in theory and practice.

The Business Career curriculum provides the opportunity for the student to earn college credits through Cooperative Education, a supervised off-campus work experience in a business environment. A related on-campus class encourages an exchange of ideas, investigates and analyzes trends and operational procedures, and explores human relations practices on the job.

In addition, students may work towards Business Certificates of Achievement as part of their degree.

For students considering starting and running their own business, working in a family business or working for a small business, it is recommended that they utilize their business electives to complete the Small Business Management Certificate of Achievement. The following additional courses will meet the certificate requirements: BUS 240 Small Business Planning and Finance, BUS 219 Small Business Operations and either BUS 242 Customer Relations or MKT 218 Advertising.

For students considering a career in finance, it is recommended that they utilize their business electives to complete the Certificate of Achievement in Finance. The following additional courses will meet the certificate requirements: BUS 211 Money and Banking, BUS 218 Investment Principles and BUS 136 Personal Finance (provided the student takes BUS 212 Principles of Finance as part of their Business core courses).

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

General Education Foundation (22 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (7 CR)		
Basic Statistics	MAT 108	3
Laboratory Science Elective		4
Social Science or Humanities (3 CR)		**3**
Choose from General Education course list		
General Education Electives (6 CR)		
Elements of Economics	ECO 113	3
Humanities Elective		3
Total General Education Credits		**22**

Business Core (39/40 CR)

Introduction to Business	BUS 112	3
Business Information Systems & Applications	BUS 119	3
Principles of Marketing I	MKT 113	3
Elements of Accounting	ACC 110	3
Principles of Accounting I	ACC 111	3
Principles of Accounting II	ACC 112	3
or		
Principles of Finance	BUS 212	
Business Law I	BUS 213	3
Business Electives		15/16
Free Electives		3
Total Core Credits		**39/40**
Total Program Credits		**61/62**

Chemical Technology

Associate in Applied Science Degree

Note: Chemical technology students requiring remediation in algebra must complete MAT 016 Intermediate Algebra prior to taking courses in Biology and Chemistry.

The Chemical Technology program is accredited by the American Chemical Society, Chemical Technology Program Approval Service (CTPAS).

The chemical industry, a major New Jersey employer, is important for the creation and manufacture of such basic items as pharmaceuticals, cosmetic/personal care products, gasoline, plastics, fabrics and foods. Chemical Technology is an ideal program of study for students who are interested in this field and desire a more practical hands-on approach to learning. Students learn to use GC, HPLC, FTIR and other state-of-the-art equipment, as well as modern wet chemical techniques.

Graduates of the Chemical Technology program with an Associate in Applied Science degree have the theoretical and technical expertise to be employed directly in research laboratories, quality control labs, pilot plants, chemical production and environmental-monitoring facilities and testing labs. Graduates can also choose to transfer to a four-year institution for a baccalaureate degree in chemistry or related scientific disciplines. Courses in this program are also ideal for retraining purposes.

The Cooperative Education (co-op) program provides students the opportunity to gain valuable, practical skills working in industry as part of their educational experience.

General Education Foundation (20 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3 CR)		
Statistics	MAT 124	3
Social Science or Humanities (3 CR)		**3**
Choose from General Education course list		
General Education Electives (8 CR)		**8**
Choose from General Education course list		
Total General Education Credits		**20**

Chemical Technology Core (44 CR)

General Chemistry I Lecture	CHM 125	3
General Chemistry I Lab	CHM 126	1
General Chemistry II Lecture	CHM 127	3
General Chemistry II Lab	CHM 128	1
Cell Biology (Fall)	BIO 123	4
Quantitative Chemical Analysis (Fall)	CHM 219	5
Instrumental Methods of Analysis (Spring)	CHM 220	5
Essentials of Organic Chemistry (Summer)	CHM 210	4
Concepts of Physics	PHY 103	4
Restricted Elective		4
Free Electives		8
HED or HES Elective		2
Total Core Credits		**44**
Total Program Credits		**64**

Science courses completed by students prior to entering the Chemical Technology program must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

Environmental Science

An Option within Chemical Technology

Note: Environmental Science students requiring remediation in algebra must complete MAT 016 Intermediate Algebra prior to taking courses in Biology and Chemistry.

The Environmental Science option is accredited by the American Chemical Society, Chemical Technology Program Approval Service (CTPAS). This two-year degree program is designed for students who plan to enter the rapidly growing field of environmental science. The curriculum stresses the interdisciplinary nature of ecological problems and provides students with a wide range of courses necessary to prepare them for the environmental challenges of the 21st century.

Graduates have the theoretical and technical expertise required to enter such diversified fields as water pollution control; environmental analysis of water, air and soil; hazardous waste management; site remediation (cleanup); and a variety of other areas. The program also provides several introductory courses which may be transferable into a four-year degree program in environmental science.

County College of Morris is a member of the New Jersey Sea Grant Consortium, a private, nonprofit organization comprised of member colleges, universities and private groups interested in marine affairs. Students may enroll in a variety of summer courses, including BIO 260 and 262, which may be used as electives in the Environmental Science option with the permission of their academic advisors. Courses are offered at the New Jersey Sea Grant Laboratory at Sandy Hook during the summer. Other courses include field trips or the use of equipment and facilities of the consortium.

General Education Foundation (20 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3 CR)		
Statistics	MAT 124	3
Social Science or Humanities (3 CR)		
Choose from General Education course list		3
General Education Electives (8 CR)		**8**
Choose from General Education course list		
Total General Education Credits		**20**

Environmental Science Core (44/45 CR)

General Chemistry I Lecture	CHM 125	3
General Chemistry I Lab	CHM 126	1
General Chemistry II Lecture	CHM 127	3
General Chemistry II Lab	CHM 128	1
Cell Biology (Fall)	BIO 123	4
Biology of Environmental Concerns	BIO 127	4
Ecology (Fall)	BIO 202	4
or		
Quantitative Chemical Analysis (Fall)	CHM 219	5
Environmental Regulation	CHM 136	3
Essentials of Organic Chemistry (Summer)	CHM 210	4
Instrumental Methods of Analysis (Spring)	CHM 220	5
Concepts of Physics	PHY 103	4
Free Electives		6
HED or HES		2
Total Core Credits		**44/45**
Total Program Credits		**64/65**

Science courses completed by students prior to entering the Environmental Science option must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

Communications

Associate in Arts Degree

Communications majors study a variety of offerings in liberal arts and technical communications leading to an Associate in Arts degree. The program provides a comprehensive overview of popular and evolving fields of communications and media literacy.

Students learn communication theory as it relates to culture, aesthetics and society. To graduate, students must show proficiency in written, oral and interpersonal communications, as well as technological competencies.

The program prepares students for transfer to four-year colleges and universities as communications majors or one of the following specializations: media, journalism, speech, film, radio and TV, new media, public relations or advertising.

General Education Foundation (45 CR)

Communications (9 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3
Humanities (9 CR)		
Lit. Survey or Lang. Seq.		6
Humanities Electives*		3
Social Science (6 CR)		
General Psychology		3
Social Science Elective		3
History (6 CR)		
History Electives*		6
Math and Science (12 CR)		
Mathematics Elective*		4
Science Elective		4
Computer Information Literacy	CMP 101	1
Communications & Technology	CMP 127	3

Diversity (3 CR)		
Intercultural Communications	ISA 110	3
Core Courses (9 CR)		
Introduction to Journalism Newswriting	COM 111	3
Introduction to Communications	COM 101	3
Introduction to Mass Media	COM 115	3
Restricted Electives (9 CR)		
Select 3 classes (9 credits) from the following.		
Introduction to Public Relations	COM 103	3
Interpersonal Communications	COM 104	3
Advanced Journalism Reporting	COM 112	3
Broadcast Journalism	COM 120	3
Editing & Publication Design	COM 209	3
Cooperative Work Exp.	COM 228	3
Internship	COM 230	3
Introduction to Film	COM 234	3
Multimedia I	MED 110	3
Media Aesthetics	MED 114	3
Introduction to Broadcasting	MED 117	3
TV Production I	MED 211	3
TV Production II	MED 212	3
Total Program Credits		**63**

**Students should consult their academic advisors when selecting these courses.*

Computer-Aided Drafting Technology Certificate

All manufacturing industry, research and development organizations, and design divisions of major corporations use drafters in the preparation of various stages of formal drawings. Typically companies that hire engineers, architects or designers have a need for people skilled in drafting.

This certificate program is designed to prepare students for entry-level positions as junior drafters, drafter trainees or drafters using computer-aided drafting (CAD). The supportive technical course work in manufacturing, materials, science, mathematics and writing assists students in continuing to advance their careers and strengthens the background of those desiring to continue their education.

Normally, students complete 29 hours of credit course work and 3 hours of non-credit mathematics to earn the certificate. However, students with strong backgrounds in mathematics may elect to take a credit course, MAT 110, in place of the non-credit MAT 014 course with the approval of their academic advisors. Depending on the courses taken, students who successfully complete this program may receive one semester or more of credit toward a Mechanical Engineering Technology degree.

Communications		
English Composition I	ENG 111	3
Mathematics and Science		
Basic Algebra I	MAT 014	N3
or		
Intermediate Algebra	MAT 016	N3
or		
College Algebra	MAT 110	3
Concepts of Physics	PHY 103	4
or		
Technical Physics*	PHY 111	
Specialized Courses		
Basic Engineering Graphics I	ENR 103	1
Computer-Aided Drafting I	ENR 117	2
Computer-Aided Drafting II	ENR 118	2
Technical Computer Applications	ENR 119	1
Instrumentation and Measurements	ENR 124	2
Computer-Aided Design & Application	ENR 126	2
Materials for Engineering Technology	MEC 110	4
Mechanical Prototyping	MEC 117	2
Computer Integrated Manufacturing (CIM)	MEC 118	2
Electronic Fabrication	ELT 210	1
Technical Elective*		3/4
Total Certificate Credits		**29 (with N3) or 32**

**Students should consult their academic advisors when selecting these courses.*

Computer Information Systems

Associate in Applied Science Degree

The Information Technology industry is constantly advancing. Recent innovations in mobile and web technologies; information security; wireless networking; visual, object-oriented programming and design; and videogame and simulation technology require state-of the-art curricula and laboratories. To keep abreast, the Department of Information Technologies offers students four Associate in Applied Science (AAS) program options.

The Administrative Support option provides training to those individuals seeking a career in today's high-technology environment in a support function. Students study business applications, digital communication, operating systems and utilities, web page design and multimedia applications. They have an option to choose concentrations in business, law, media, medical, security or web development. Graduates may find employment as administrative assistants, office assistants, conference planners, office managers, data-entry specialists, receptionists, front desk assistants, records specialists or administrative clerks.

The Game Development option offers students interested in the computer game and simulation fields a solid background in the foundations of hardware/software, operating systems, programming, systems analysis and design, data structures and

Continued on next page

algorithms, advanced math, physics and animation. Specialized courses in game design, game programming and game production provide students with relevant skills and experience with industry standard tools and techniques. Students create a game design, build game programs using a popular game engine, and, in a capstone course, produce a working game with a team of student developers and artists.

The Management Information Systems option focuses on integrating information technology solutions and standard processes to meet the information needs of businesses. Students study visual and high-level programming languages, business application programs, databases, operating systems, systems analysis and design, and business-related courses. By designing and programming classic business application programs, graduates are well prepared for entry-level business analyst/programmer positions.

The Technical Support option is for students interested in the support functions of the information technology infrastructure of business organizations. Students study operating systems and utilities, business application programs, databases, web technology, programming and network concepts. The knowledge and practical experiences students gain equip them for support positions in the information technology field.

The selection of a particular option should be made after consultation with an Information Technologies department faculty advisor.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements for these options and visit www.njtransfer.org.

Administrative Support

A Computer Information Systems AAS Degree Option

General Education Foundation (22 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3 CR)		
Statistics	MAT 124	3
Humanities (3 CR)		**3**
Choose from General Education course list		
General Education Electives (10 CR)		
General Psychology	PSY 113	3
Principles of Sociology	SOC 120	3
Laboratory Science Elective		4
Total General Education Credits		**22**

Administrative Support Core (39/41 CR)

Introduction to Business	BUS 112	3
Systems Analysis and Design	CMP 123	3
Computer Operating Systems & Utilities	CMP 200	3
Computer Software Applications (MS OFFICE)	CMP 203	3/4
or		
Computer Technology & Applications	CMP 126	
Database Programming (MS ACCESS)	CMP 205	3
Electronic Spreadsheets (MS EXCEL)	CMP 207	3
The Internet and Web Page Design	CMP 239	3
Multimedia I	MED 110	3
CMP, MED, TEL or BUS Electives		6
Technical Concentrations		6/7
Free Elective		3
Total Core Credits		**39/41**
Total Program Credits		**61/63**

Game Development

A Computer Information Systems AAS Degree Option

General Education Foundation (27/28 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (4 CR)		
Precalculus	MAT 123	4
Humanities (3 CR)		**3**
Choose from General Education course list		
General Education Electives (14/15 CR)		
General Psychology		3
Analytic Geometry and Calculus I	MAT 131	4
Mathematics Elective		3/4
Laboratory Science Elective		4
Total General Education Credits		**27/28**

Game Development Core (36/37 CR)

Game Design Concepts	CMP 108	3
Computer Science I	CMP 128	3
Systems Analysis and Design	CMP 123	3
Game Programming	CMP 150	3
Computer Operating Systems & Utilities	CMP 200	3
C Programming Language (C#)	CMP 208	3
Data Structures and Algorithms	CMP 233	3
Game Production	CMP 250	3
Media Aesthetics	MED 114	3
Animation	MED 220	3
Computer Information Systems		6/7
and/or		
MED Electives		
Total Core Credits		**36/37**
Total Program Credits		**63/65**

Management Information Systems

A Computer Information Systems AAS Degree Option

General Education Foundation (22/23 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math/Science/Technology (3/4 CR)		
Statistics	MAT 124	3
or		
Probability & Statistics	MAT 130	4
Humanities (3 CR)		**3**
Choose from General Education course list		
General Education Electives (10 CR)		
Principles of Sociology	SOC 120	3
Principles of Economics I	ECO 211	3
Laboratory Science Elective		4
Total General Education Credits		**22/23**

Management Information Systems Core (39 CR)

Principles of Accounting I	ACC111	3
Computer Science I	CMP 128	3
Systems Analysis and Design	CMP 123	3
Computer Operating Systems & Utilities	CMP 200	3
Database Programming (MS ACCESS)	CMP 205	3
Electronic Spreadsheets (MS EXCEL)	CMP 207	3
C Programming Language (C#)	CMP 208	3
Introduction to UNIX	CMP 209	3
Advanced UNIX	CMP 235	3
Visual Basic (VB.NET)	CMP 237	3
The Internet and Web Page Design	CMP 239	3
Web Design II	CMP 244	3
Computer Information Systems, Media		3/4
or		
Telecommunications Systems Elective		
Total Core Credits		**39/40**
Total Program Credits		**61/63**

Technical Support

A Computer Information Systems AAS Degree Option

General Education Foundation (22/23 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3/4 CR)		
Statistics	MAT 124	3
or		
Probability & Statistics	MAT 130	4
Humanities (3 CR)		**3**
Choose from General Education course list		
General Education Electives (10 CR)		
Principles of Sociology	SOC 120	3
Principles of Economics I	ECO 211	3
Laboratory Science Elective		4
Total General Education Credits		**22/23**

Technical Support Core (39/40 CR)

Computer Science I	CMP 128	3
Systems Analysis and Design	CMP 123	3
Network Security	CMP 124	3
Computer Operating Systems & Utilities	CMP 200	3
Database Programming (MS ACCESS)	CMP 205	3
Electronic Spreadsheets (MS EXCEL)	CMP 207	3
Introduction to UNIX	CMP 209	3
Visual Basic (VB.NET)	CMP 237	3
The Internet and Web Page Design	CMP 239	3
Web Design II	CMP 244	3
Routing I (CISCO CCNA)	TEL 110	3
Computer Information Systems, Media		3
or		
Telecommunications Systems Elective		
Free Elective		3/4
Total Core Credits		**39/40**
Total Program Credits		**61/63**

Technology-based courses taken by a student at least seven years prior to the time the student applies for graduation may not be applied to a degree or certificate within the Department of Information Technologies.

Computer Information Systems Certificates of Achievement

The Computer Information Systems Certificates of Achievement are designed for current or future professionals who wish to improve their technical knowledge and skills in computer-related areas. Each certificate includes a balance of theory and hands-on experience. The certificates are designed for full-time and part-time students who are working or plan to work in one of the following areas. It is possible for an individual to complete a certificate in two semesters.

Certificates of Achievement may also be offered on-site to local businesses and can be customized for completion in a shorter time period. Contact the Information Technologies department for additional information at 973-328-5780.

• Administrative Support

A Certificate of Achievement within Computer Information Systems

Computer Software Applications	CMP 203	3
Electronic Spreadsheets (MS Excel)	CMP 207	3

Restricted Electives* (6 CR)

Choose two courses from the following list

Introduction to Business	BUS 112	3
Human Relations in Business	BUS 201	3
Foundations of Information Security	CMP 120	3
Database Programming (MS Access)	CMP 205	3
The Internet and Web Page Design	CMP 239	3
Multimedia I	MED 110	3
Introduction to Telecommunications	TEL 109	3

Total Certificate Credits 12

**Students should consult their academic advisors when selecting the restricted electives.*

• Computer Software Applications

A Certificate of Achievement within Computer Information Systems

Computer Technology & Applications	CMP 126	4
Database Programming (MS Access)	CMP 205	3
Electronic Spreadsheets (MS Excel)	CMP 207	3
Multimedia I	MED 110	3
Computer Information Systems or Media Elective*		3

Total Certificate Credits 16

**Students should consult their academic advisors when selecting these courses.*

• Information Security

A Certificate of Achievement within Computer Information Systems

Foundations of Information Security	CMP 120	3
Network Security	CMP 124	3
Information Security Management	CMP 125	3

Restricted Electives* (6 CR)

Choose two courses from the following list

Principles of Management	BUS 215	3
Forensic Science	CHM 105	4
Introduction to Security	CJS 115	3
Introduction to Criminology	CJS 116	3
Criminal Justice System	CJS 121	3
Investigative Function	CJS 215	3
Criminal Evidence and Procedure	CJS 223	3
Introduction to Police Operations	CJS 224	3
Introduction to Data Processing	CMP 110	3
Systems Analysis and Design	CMP 123	3
Computer Science I	CMP 128	3
Database Programming (MS Access)	CMP 205	3
Ethical Hacking and Systems Defense	CMP 243	3
Ethics	PHL 114	3
Introduction to Telecommunications	TEL 109	3
Routing I	TEL 110	3
Routing II	TEL 120	3
Routing III	TEL 220	4
Data Communication	TEL 232	3
Telecommunications Systems	TEL 234	3

Total Certificate Credits 15

**Students should consult their academic advisors when selecting these courses.*

• Web Development

A Certificate of Achievement within Computer Information Systems

The Internet and Web Page Design	CMP 239	3
Web Design II	CMP 244	3
Web Design Tools	CMP 245	3

Restricted Electives* (6 CR)

Choose two courses from the following list

Game Design Concepts	CMP 108	3
Foundations of Information Security	CMP 120	3
Database Programming (MS Access)	CMP 205	3
Multimedia I	MED 110	3
Multimedia II	MED 113	3
Digital Media Production	MED 119	3
Animation	MED 220	3
Advanced Animation	MED 240	3

Total Certificate Credits 15

**Students should consult their academic advisors when selecting these courses.*

Computer Science

Associate in Science Degree

The Associate in Science degree in Computer Science prepares students for transfer to a bachelor's-level degree program in Computer Science. Degree requirements are based on national standards. Core Computer Science knowledge and skills are acquired in the following courses: Computer Science I, II and III (Data Structures & Algorithms), Operating Systems, Computer Assembly Language and Systems Analysis & Design.

Today most career opportunities in Computer Science require a minimum of a bachelor's degree. This is due to not only increased competition for IT jobs on a worldwide basis but also because the demands of an IT position require a solid foundation in several and varied areas of computing, a broad range that simply can-

not be completed in two years. The United States Department of Labor estimates that the job growth for computer-related fields is much higher than the average growth rate – a promising outlook for Computer Science students. It projects the job growth rate to be 20 percent from 2008 through 2018. The New Jersey Department of Labor predicts that 6,000 new jobs will be added to the technology sector during this time period. Some examples of positions available to B.S. Computer Science degree graduates include programmer, database manager, game developer, web developer, mobile applications developer, systems engineer, software engineer and systems analyst.

There are numerous opportunities to transfer to a four-year institution and study Computer Science. The following public and private New Jersey colleges and universities offer a bachelor's-level Computer Science degree: The College of New Jersey, Kean University, Montclair State University, New Jersey City University, Ramapo College, Richard Stockton State College, Rowan University, Thomas Edison State College, William Paterson University, NJIT, Rutgers University, Drew University, Fairleigh Dickinson University, Monmouth University, Princeton University, College of Saint Elizabeth, Saint Peter's College, Seton Hall University and Stevens Institute of Technology.

General Education Foundation (35 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (12 CR)		
Precalculus	MAT 123	4
Analytic Geometry & Calculus I	MAT 131	4
Analytic Geometry & Calculus II	MAT 132	4
Social Science/Diversity (6 CR)		
Choose from General Education list (Social Science)		3
Choose from General Education list (Diversity)		3
Humanities (3 CR)		
Choose from General Education list (Humanities)		3
General Education (8 CR)		
Laboratory Science Sequence		4
Laboratory Science Sequence		4

Computer Science Core (27/28 CR)

Systems Analysis & Design	CMP123	3
Computer Science I	CMP128	3
Computer Science II (JAVA)	CMP129	3
Operating Systems	CMP200	3
Computer Assembly Language	CMP230	3
Data Structures & Algorithms (CSIII)	CMP233	3
Probability & Statistics	MAT 130	4
or		
Linear Algebra	MAT228	3
CIS Electives		6
Total Program Credits		**62/63**

**Students should consult their academic advisors when selecting these courses.*

Criminal Justice

Associate in Science Degree

This curriculum of study is designed for students seeking further education in criminal justice, as well as those needing career-oriented skills and knowledge. The ability of police, judicial and correctional agencies to control and respond to crime is inherently related to the human interaction skills of those who staff the system. This curriculum provides course work to guide the student in understanding the complex issues related to the role of law.

General Education Foundation (34 CR)

Communication (9 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3
Math-Science-Technology (10 CR)		
Introduction to Data Processing	CMP 110	3
Forensic Science	CHM 105	4
Basic Statistics	MAT 108	3
Social Science (3 CR)		
Principles of Sociology	SOC 120	3
Humanities (3 CR)		
History of the	HIS 204	3
African American Experience		
or		
History of American Women	HIS 209	
or		
Twentieth Century	HIS 167	
American History: US II		
Social Science/Humanities Electives (3 CR)		**3**
Choose from General Education course list		
General Education Electives (6 CR)		**6**
Choose from General Education course list		
Total General Education Credits		**34**

Criminal Justice Core (30 CR)

Criminal Justice System	CJS 121	3
Introduction to Criminology	CJS 116	3
Concepts of Criminal Law	CJS 222	3
Criminal Evidence & Procedure	CJS 223	3
American Government	POL 111	3
State & Local Government	POL 231	3
Constitutional Law	POL 222	3
Deviant Behavior	SOC 222	3
History of Minorities	HIS 203	3
Criminal Justice Elective		3
Total Core Credits		**30**
Total Program Credits		**64**

Culinary Arts and Science

Associate in Applied Science Degree

This degree program addresses the need for more diverse opportunities in the field of culinary arts. Students learn how to cook professionally in a production kitchen and also have the opportunity to explore specialized interests such as Food Styling, Food Science and other studies of the Culinary Arts. The program's curriculum is based on a solid foundation of classical and modern American cuisine but also provides students with the opportunity to build their own career interests as they learn how to prepare and serve food in a safe manner.

Transfer opportunities are available for students who wish to complete a more advanced degree in Hospitality Management, Culinary Arts or other related studies.

General Education Foundation (20/21 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science Technology (3/4 CR)		**3/4**
Math/Science/Technology Elective		
Social Science or Humanities (3 CR)		**3**
General Education Electives (8CR)		**8**
Choose from General Education Course List		
Total General Education Credits		**20/21**

Specialized Culinary Core (42/44 CR)

Serv-Safe Food Handling	HOS 100	1
Introduction to Food	HOS 101	3
Food Management	HOS 102	3
Food Production	HOS 103	3
Food Science and Nutrition	HOS 105	3
Success in Hospitality	HOS 106	1
Introduction to Baking	HOS 117	3
Introduction to Hospitality	HOS 118	3
Advanced Baking	HOS 121	3
International Cuisines	HOS 123	3
American Regional Cuisine	HOS 126	1
Italian Cuisine	HOS 127	1
Chinese Cuisine	HOS 128	1
Dining Room Management	HOS 210	3
Human Resources in Hospitality Management	HOS 211	3
Food & Beverage Purchasing & Receiving	HOS 213	3
Co-op Work Experience	HOS 221	1-3
Food as Art	HOS 233	3
Total Core Credits		**42/44**
Total Program Credits		**62/65**

Culinary Arts

A Culinary Arts and Science Certificate of Achievement

This Certificate of Achievement is designed to fulfill the needs of students working in the hospitality field either as preliminary training to the career or as continuing education within the industry. The coursework provides basic skills and training in the many areas of Food Safety, Production and Management.

Culinary Arts – Certificate and Options

Serv-Safe Food Handling	HOS 100	1
Introduction to Food	HOS 101	3
Select one of the following options:		
Culinary Arts		
Food Management	HOS 102	3
Food Production	HOS 103	3
Baking Arts		
Introduction to Baking	HOS 117	3
Advanced Baking	HOS 121	3
World Cuisines		
International Cuisines	HOS 123	3
American Regional Cuisines	HOS 126	1
Chinese Cuisines	HOS 127	1
Italian Cuisine	HOS 128	1
Total Certificate Credits		**10**

Digital Media Technology

Associate in Applied Science Degree

This Associate in Applied Science degree is designed to prepare students to enter the field of multimedia technology – digital media, computer animation, game design, digital video/audio production, web design and multimedia for the web. Specialized classes using industry-standard software and hardware prepare students for careers in multimedia design, development and delivery. Technical emphasis courses afford students an opportunity to explore disciplines of interest to them such as music, photography or telecommunications.

General Education Foundation (21/23 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (6/8 CR)		**6/8**
Mathematic Elective		3/4
Science Elective		3/4
Social Science or Humanities (3 CR)		
General Psychology	PSY 113	3
General Education Electives (6 CR)		**6**
Humanities Electives		
Total General Education Credits		**21/23**

Digital Media Technology Core (42/44 CR)

Two-Dimensional Design	ART 130	3
The Internet and Web Page Design	CMP 239	3
Web Design Tools	CMP 245	3
Multimedia I	MED 110	3
Multimedia II	MED 113	3
Media Aesthetics	MED 114	3
Digital Media Production	MED 119	3
Digital Video Editing	MED 210	3
Multimedia Authoring and Design	MED 213	3
Animation	MED 220	3
Technical Elective		3/4
Technical Emphasis Elective		6
Free Elective		3/4
Total Core Credits		**42/44**

Total Program Credits **63/65**

Technology-based courses taken by a student at least seven years prior to the time the student applies for graduation may not be applied to a degree or certificate within the Department of Information Technologies.

Media Technology

A Certificate of Achievement within Digital Media Technology

The Certificate of Achievement in Media Technology is a compact collection of courses in media production skills that enables individuals to work effectively in the creative aspects of digital media. The program is flexible so students may concentrate in a particular area of interest or build a broad repertoire of basic production skills. It is intended for working professionals who wish to gain or enhance skills needed to find employment or advance their careers in media-related occupations including advertising, broadcasting, marketing, multimedia development, public relations and training.

Multimedia I	MED 110	3
Digital Media Production	MED 119	3
Restricted Electives * (9 CR)		
(*Select three courses from the following.)		
Multimedia II	MED 113	3
Media Aesthetics	MED 114	3
Digital Video Editing	MED 210	3
Television Production I	MED 211	3
Television Production II	MED 212	3
Multimedia Authoring and Design	MED 213	3
Animation	MED 220	3
Advanced Animation	MED 240	3
Special Topics in Media	MED 292/293	3
Game Design Concepts	CMP 108	3
Internet and Web Page Design	CMP 239	3
Web Design Tools	CMP 245	3
Broadcast Journalism	COM 120	3
Introduction to Electronic Music	MUS 112	3
Introduction to Music Recording	MUS 165	3
Photography I	PHO 115	3
Digital Imaging I	PHO 204	3
Total Certificate Credits		**15**

**Students should consult their academic advisors when selecting these courses.*

Early Childhood Education

Associate in Science Degree

The Associate in Science degree in Early Childhood Education focuses on ensuring that candidates develop theoretical and practical knowledge in such areas as humanities, mathematics and technology, social sciences, biological and physical sciences, the arts, multicultural and global perspectives, and personal health and fitness.

An Associate in Science in Early Childhood Education is appropriate for those students who may wish to transfer and earn a baccalaureate degree in Early Childhood Education. Graduates have several options upon the successful completion of this program. The program prepares students to work as early childhood professionals in a childcare setting.

General Education Foundation (30/31 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (9-10 CR)		**9/10**
Mathematics Elective (3-4 CR)		
Laboratory Science Elective (4 CR)		
Technology (1-3 CR)		
Social Science (3 CR)		
General Psychology	PSY 113	3
Humanities (3 CR)		
Speech Fundamentals	ENG 109	3
Social Science or Humanities (3 CR)		
Principles of Sociology	SOC 120	3
General Education Courses (6 CR)		
Contemporary Social Issues	SOC 202	3
Humanities Elective		3
Total General Education Credits		**30/31**

Continued on next page

Early Childhood Education Core (34 CR)

Child Psychology	PSY 213	3
Educational Psychology	PSY 217	3
Art Start – A Creative Experience	ART 101	3
Music in Early Childhood	MUS 129	3
Children's Literature	ENG 118	3
Early Childhood Development	CDC 110	3
Teaching in America	EDU 111	3
Behavioral Observation in Education	EDU 211	3
Sociology	SOC 202	3
The Family	SOC 209	3
Cooperative Education Work Experience	CDC 228	3
Cooperative Education Related Class	CDC 229	1
Total Core Credits		**34**

Total Program Credits **64/65**

Early Childhood Development

A Certificate within Early Childhood Education

This program is designed to prepare students for a career in the field of child care. The Early Childhood Development Certificate is an in-depth credential for the early childhood teacher. Upon completion of 34 credits, individuals are eligible for a County College of Morris certificate.

Students are required to meet with the department advisor to review their curriculum and discuss educational and career goals. You can reach an advisor by contacting the department at 973-328-5612.

Communications (3 CR)		
English Composition I	ENG 111	3
Humanities (6 CR)		
Children's Literature	ENG 118	3
Music in Early Childhood	MUS 129	3
Social Science (15 CR)		
General Psychology	PSY 113	3
Child Psychology	PSY 213	3
Educational Psychology	PSY 217	3
Principles of Sociology	SOC 120	3
The Family	SOC 209	3
Child Development (10 CR)		
Early Childhood Development	CDC 110	3
Cooperative Work Experience–Child Care*	CDC 228	3
Cooperative Work Experience	CDC 229	1
Art Start-A Creative Experience	ART 101	3
Total Certificate Credits		**34**

**Students should consult their academic advisors when selecting these courses.*

Electronics Engineering Technology

Associate in Applied Science Degree

The Electronics Engineering Technology program is a two-year career-oriented curriculum that prepares students for positions in electronics industries and related electronics service. Job activities center on technical problem-solving and the practical application of engineering.

The specific educational objectives of the Electronics Engineering Technology program are to: 1) produce graduates who are employed and operate effectively in positions that lie between those of the skilled craftsperson and those of the graduate electrical engineer; 2) produce graduates who can successfully transfer and complete a baccalaureate degree program in Electronics Engineering Technology.

After obtaining an Associate in Applied Science degree, it is possible to continue at a four-year college and to complete a Bachelor of Science Degree in Engineering Technology. No prior knowledge of electronics is necessary to enter the Electronics Engineering Technology program. Core electronics courses are sequenced along with applied mathematics and science to develop a broad background in the technology. Each electronics course contains a laboratory, which utilizes modern test instruments and applies classroom theory to practical applications.

In the second year of study, students interested in health-related fields may select the Biomedical Equipment option. Cooperative Education, a work-study program with local electronic firms, is available.

The Electronics Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET, www.abet.org.

Articulation Agreements

An existing agreement with New Jersey Institute of Technology (NJIT) provides students with a local transfer opportunity. Students should check with the Transfer Office about the latest articulation agreements for this program both locally and nationally.

General Education Foundation (20 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3 CR)		
College Algebra	MAT 110	3
Social Science or Humanities (3 CR)		
This course must meet both the General Education and Diversity requirements.		3
General Education (8 CR)		
Applied Calculus	MAT 113	4
Precalculus	MAT 123	4
Total General Education Credits		**20**

Electronics Core (45 CR)

Electricity and Electronics	ELT 201	4
Active Circuit Components	ELT 115	3

Digital Principles	ELT 110	3
Advanced Digital and Microprocessors	ELT 209	4
Electronic Fabrication	ELT 210	1
Active Circuit Design	ELT 213	4
Industrial Electronics	ELT 215	4
Electronic Communications Systems	ELT 231	4
Computer-Aided Drafting I	ENR 117	2
Technical Computer Applications	ENR 119	1
Technical Computer Programming	ENR 120	2
Instrumentation and Measurements	ENR 124	2
Technical Physics I	PHY 111	4
Technical Physics II	PHY 112	4
Technical Elective		3
Total Core Credits		**45**
Total Program Credits		**65**

Biomedical Equipment

Associate in Applied Science Degree
An Electronics Engineering Technology Option

General Education Foundation (20 CR)

Communication (6 CR)

English Composition I	ENG 111	3
English Composition II	ENG 112	3

Math-Science-Technology (3 CR)

College Algebra	MAT 110	3

Social Science or Humanities (3 CR)

This course must meet both the General Education and Diversity requirements.		3

General Education (8 CR)

Laboratory Science (Restrictive)	BIO/CHM	4
Precalculus	MAT 123	4

Total General Education Credits 20

Electronics Engineering Technology Biomedical Equipment Option Core (44 CR)

Electricity and Electronics	ELT 201	4
Active Circuit Components	ELT 115	3
Biomedical Electronics	ELT 200	3
Advanced Digital and Microprocessors	ELT 209	4
Electronic Fabrication	ELT 210	1
Active Circuit Design	ELT 213	4
Industrial Electronics	ELT 215	4
Digital Principles	ELT 110	3
Biomedical Clinical Experience	ELT 227**	3
Electronic Communications Systems	ELT 231	4
Computer-Aided Drafting I	ENR 117	2
Technical Computer Applications	ENR 119	1
Technical Computer Programming	ENR 120	2
Instrumentation and Measurements	ENR 124	2
Technical Physics I	PHY 111	4
Total Core Credits		**44**
Total Program Credits		**64**

***Students must undergo a federal and state criminal background check and purchase professional liability insurance prior to the start of their clinical experience. A student denied clinical placement due to the results of the criminal background check will not be able to complete the program.*

Digital Technology

A Certificate of Achievement
within Electronics Engineering Technology

The Digital Technology Certificate of Achievement is designed for present or future professionals who seek to improve their technical knowledge and skills in certain areas. The certificate is balanced with theory and hands-on experience. This certificate provides a strong foundation in digital theories and applications. It's possible to complete the certificate within a year and the courses fully transfer to the Electronics Engineering Technology degree.

Digital Principles	ELT 110	3
Advanced Digital and Microprocessors	ELT 209	4
Technical Computer Applications	ENR 119	1
Technical Computer Programming	ENR 120	2
Routing I	TEL 110	3
Total Certificate Credits		**13**

Basic Electronics

A Certificate of Achievement
within Electronics Engineering Technology

The Basic Electronics Certificate of Achievement is designed for present or future professionals who seek to improve their technical knowledge and skills in certain areas. The certificate is balanced with theory and hands-on experience. This certificate provides an introduction to electronic theories and applications. It's possible to complete the certificate within a year and the courses fully transfer to the Electronics Engineering Technology degree.

Instrumentation and Measurements	ENR 124	2
Technical Computer Applications	ENR 119	1
College Algebra	MAT 110	3
Active Circuit Components	ELT 115	3
Electricity and Electronics	ELT 201	4
Total Certificate Credits		**13**

Advanced Electronics

A Certificate of Achievement within Electronics Engineering Technology

The Advanced Electronics Certificate of Achievement is designed for present or future professionals who seek to improve their technical knowledge and skills in certain areas. The certificate is balanced with theory and hands-on experience. This certificate provides an advanced introduction to the theories and techniques used in the analysis of electronic circuits. It is possible to complete the certificate within a year and the courses fully transfer to the Electronics Engineering Technology degree.

Active Circuit Design	ELT 213	4
Industrial Electronics	ELT 215	4
Electronic Communication Systems	ELT 231	4
Total Certificate Credits		**12**

Engineering Science

Associate in Science Degree

The Engineering Science program challenges students to an academically rigorous preparation for transfer into baccalaureate programs offered by major engineering institutions. It emphasizes high-quality core courses in mathematics, science and engineering. An array of general education courses exposes students to the styles and interests of professionals in a variety of academic disciplines.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

General Education Foundation (30 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (11 CR)		
Analytic Geometry & Calculus I	MAT 131	4
Differential Equations	MAT 232	3
General Chemistry I – Lecture	CHM 125	3
General Chemistry I – Lab	CHM 126	1
Social Science (6 CR)		
Principles of Economics I	ECO 211	3
Principles of Economics II	ECO 212	3
Humanities (3 CR)		
Choose from General Education course list		3
General Education (4 CR)		
General Chemistry II – Lecture	CHM 127	3
General Chemistry II – Lab	CHM 128	1
Total General Education Credits		**30**

Engineering Science Core (39 + N1 CR)

Analytic Geometry & Calculus II	MAT 132	4
Calculus III	MAT 230	4
Engineering Graphics	ENR 121	2
Introduction to Engineering	ENR 123	N1
Computer Programming for Engineers	ENR 125	3
Mechanics of Solids	ENR 222	3
Engineering Mechanics I	ENR 223	3
Engineering Mechanics II	ENR 224	3
Engineering Circuit Analysis I	ENR 235	3
Engineering Circuit Analysis Laboratory I	ENR 236	1
Engineering Physics I – Lecture	PHY 130	4
Engineering Physics II – Lecture	PHY 133	4
Engineering Physics II – Lab	PHY 134	1
Engineering Physics III – Lecture	PHY 232	3
Engineering Physics III – Lab	PHY 233	1
Total Core Credits		**39 + N1**
Total Program Credits		**69 + N1**

English for Speakers of Other Languages (ESL)

This program of study is designed for students whose native language is not English but who already have some fundamental knowledge of the language as determined by a placement examination administered by County College of Morris. The curriculum provides students with the academic English skills and cultural knowledge needed for college studies. Upon successful completion of the program, students go into the appropriate course in the English department to fulfill the Communications requirement of their major. Students are not permitted to enroll in other courses in their major until they successfully complete Level II.

Level l		
ESL Reading I	ESL 010	N4
ESL Writing I	ESL 017	N8
Conversational English	ESL 021	N3
Level II		
ESL Reading II	ESL 019	N4
ESL Writing II	ESL 020	N8
Advanced Conversational English	ESL 022	N3
Level III		
Writing III	ESL 033	N6
ESL Writing Review**	ESL 040	N1

***Note: ESL 040 is a two-week restricted course that is scheduled three times a year upon conclusion of the current semester. Students who do not pass the Exit Exam in ESL 033 are placed in this course upon recommendation of the ESL 033 instructor and with departmental permission.*

Exercise Science

Associate in Science Degree

This program prepares students to transfer to baccalaureate programs in Exercise Science, Exercise Physiology, Adult Fitness, Personal Training, Cardiac Rehabilitation, Kinesiology, Athletic Training, Physical Education and similar curricula. Graduates of such baccalaureate programs find employment in health and wellness management, health center and fitness center program management, corporate health and wellness programs, health and physical education teaching, exercise physiology teaching and research, medical exercise rehabilitation programs, adult fitness programs and related fields. The curriculum includes general education requirements, a basic science and math foundation and a broad base in discipline-related courses such as exercise physiology, nutrition, kinesiology and exercise measurement and prescription.

If you are considering a career in Health/Physical Education teaching, please read about the County College of Morris Teacher Education Specialization in Health/Physical Education.

General Education Foundation (30 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math/Science/Technology (10 CR)		
Mathematics Restricted Elective		3
Intro to Data Processing	CMP 110	3
or		
Computer Software Applications	CMP 203	
Laboratory Science Restricted Elective		4
Social Science (3 CR)		
General Psychology	PSY 113	3
Humanities (3 CR)		
Choose from General Education course list		3
General Education Electives (9 CR)		
Speech Fundamentals	ENG 109	3
Electives		6
Total General Education Credits		**30**

Exercise Science Core (32 CR)

Introduction to Exercise Science	HES 111	3
Anatomy & Physiology I	BIO 101	4
Anatomy & Physiology II	BIO 102	4
Kinesiology	HES 211	3
First Aid & Emergency Care	HED 295	3
Cardio Pulmonary Resuscitation	HED 283	1
Exercise Physiology	HES 212	3
Personal & Family Nutrition	HED 115	3
Personal Health & Wellness	HED 286	3
Exercise Measurement & Prescription	HES 213	3
Exercise Science Restricted Electives		2
Total Core Credits		**32**
Total Program Credits		**62**

Fine Arts

Associate in Fine Art Degree

The Associate in Fine Arts (AFA) degree focuses on developing an understanding of the specific arts disciplines of dance, drama or visual arts through the intensive study of technique, history, theory and hands-on approaches in studio work and/or performance.

The AFA degree is designed to provide students with the competencies necessary to achieve seamless articulation into a Bachelor of Fine Arts program. The program focuses on intensive technical training and artistic development, with emphasis on one of three major areas of concentration: dance, drama or visual arts.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

If you are considering a career in teaching, please read about the County College of Morris Teacher Education Specialization in Visual Arts.

Dance

Associate in Fine Arts Degree

General Education Foundation (21/22 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3/4 CR)		
Mathematics Elective		3
Technology		0/1
Social Science or Humanities (3 CR)		
Choose from General Education course list		3
General Education Electives (9 CR)		
Dance Appreciation	DAN 112	3
Diversity Elective		3
General Education Elective		3
Total General Education Credits		**21/22**

Dance Core (42/43 CR)

Ballet I	DAN 137	2
Ballet II	DAN 138	2
Intermediate Ballet	DAN 211	3
Advanced Ballet	DAN 212	3
Dance History	DAN 134	3
Anatomy & Physiology I	BIO 101	4
Dance Theatre Workshop I	DAN 135	1
Dance Theatre Workshop II	DAN 136	1
Dance Theatre Workshop III	DAN 220	1
Dance Theatre Workshop IV	DAN 222	1
Modern Dance I	DAN 141	2
Modern Dance II	DAN 142	2

Continued on next page

Intermediate Modern Dance	DAN 216	3
Advanced Modern Dance	DAN 217	3
Choreography I	DAN 224	3
Choreography II	DAN 226	3
Kinesiology	HES 211	3
HED Elective		2/3
Total Core Credits		**42/43**
Total Program Credits		**63/65**

Design

An Option within Fine Arts

The Design program offers preparatory studies in the fields of applied design: interior design, fashion design, fashion merchandising, architecture and industrial design. Students obtain a solid foundation in the visual arts and intermediate studies that focus on developing an understanding of design principles through the study of history, design theory and hands-on studio courses.

Project work explores various media applicable to a wide range of design professions. The program awards an Associate in Fine Arts (AFA) degree and is designed to transfer to four-year colleges as the first two years of a liberal arts baccalaureate. Design graduates major in industrial design, interior design, architecture, fashion design, fashion merchandising, design education (teaching design) or other design disciplines.

• Architecture

An Option within Design

General Education Foundation (26 CR)

Communication (6 CR)

English Composition I	ENG 111	3
English Composition II	ENG 112	3

Math-Science-Technology (11/12 CR)

College Algebra	MAT 110	3
Pre-Calculus	MAT 123	4
General Physics I - Lecture	PHY 125	3
General Physics I - Lab	PHY 126	1
Technology		0/1
Social Science Elective		**3**

General Education Courses (6 CR)

Art History I	ART 133	3
Art History II	ART 134	3
Total General Education Credits		**26/27**

Design/Architecture Core (40 CR)

History of Design	DSN 110	3
Drawing 1 - AFA	ART 122	3
Two Dimensional Design - AFA	ART 130	3
Color Theory - AFA	ART 131	3
Three Dimensional Design -AFA	ART 132	3
Drawing for Designers	DSN 165	3
Design Rendering	DSN 125	3
Design Concepts I	DSN 120	3
Design Concepts II	DSN 220	3
Portfolio Presentation	ART 230	3
CAD I (for Designers)	ENR 117	2
CAD II (for Designers)	ENR 118	2
Design Elective		3
Design Elective		3
Total Core Credits		**40**
Total Program Credits		**66/67**

• Fashion Design

An Option within Design

General Education Foundation (22/23 CR)

Communication (6 CR)

English Composition I	ENG 111	3
English Composition II	ENG 112	3

Math-Science-Technology (7/8 CR)

Mathematics Elective		3
Laboratory Science Elective		4
Technology		0/1
Social Science Elective		**3**

General Education Courses (6 CR)

Art History I	ART 133	3
Art History II	ART 134	3
Total General Education Credits		**22/23**

Design/Fashion Design Core (42 CR)

History of Design	DSN 110	3
Drawing I - AFA	ART 122	3
Drawing II - AFA	ART 123	3
Two Dimensional Design - AFA	ART 130	3
Color Theory - AFA	ART 131	3
Drawing for Designers - AFA	DSN 165	3
Design Rendering	DSN 125	3
Design Concepts I - AFA	DSN 120	3
Design Concepts II - AFA	DSN 220	3
Portfolio Presentation - AFA	ART 230	3
Fashion Construction Technology I–AFA	DSN 135	3
Fashion Construction Technology II–AFA	DSN 160	3
Fashion Design Elective		3
Fashion Design Elective		3
Total Core Credits		**42**
Total Program Credits		**64/65**

• Fashion Merchandising

An Option within Design

General Education Foundation (22/23 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (7/8 CR)		
Mathematics Elective		3
Laboratory Science Elective		4
Technology		0/1
Social Science Elective		**3**
General Education Courses (6 CR)		
Art History I	ART 133	3
Art History II	ART 134	3
Total General Education Credits 22/23		

Design/Fashion Merchandising Core (39 CR)

History of Design	DSN 110	3
Drawing 1 - AFA	ART122	3
Two Dimensional Design - AFA	ART 130	3
Three Dimensional Design - AFA	ART 132	3
Color Theory - AFA	ART 131	3
Drawing for Designers	DSN 165	3
Design Rendering	DSN 125	3
Design Concepts I	DSN 120	3
Design Concepts II	DSN 220	3
Portfolio Presentation	ART 230	3
Intro to Fashion Merchandising	DSN 145	3
Fashion Merchandising II	DSN 146	3
Principles of Marketing I	MKT 113	3
Fashion Merchandising Elective		3
Total Core Credits		**42**

Total Program Credits **64/65**

• Industrial Design

An Option within Design

General Education Foundation (22/23 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (7/8 CR)		
College Algebra	MAT 110	3
Laboratory Science Elective		4
Technology		0/1
Social Science Elective		**3**
General Education Courses (6 CR)		
Art History I	ART 133	3
Art History II	ART 134	3
Total General Education Credits		**22/23**

Design/Industrial Design Core (40 CR)

History of Design	DSN 110	3
Drawing 1 - AFA	ART 122	3
Two Dimensional Design - AFA	ART 130	3
Color Theory - AFA	ART 131	3
Three Dimensional Design -AFA	ART 132	3
Drawing for Designers	DSN 165	3
Design Rendering	DSN 125	3
Design Concepts I	DSN 120	3
Design Concepts II	DSN 220	3
Portfolio Presentation	ART 230	3
CAD I (for Designers)	ENR 117	2
CAD II (for Designers)	ENR 118	2
Design Elective		3
Design Elective		3
Total Core Credits 40		

Total Program Credits **62/63**

• Interior Design

An Option within Design

General Education Foundation (22/23 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (7/8 CR)		
Mathematics Elective		3
Laboratory Science Elective		4
Technology		0/1
Social Science Elective		**3**
General Education Courses (6CR)		
Art History I	ART 133	3
Art History II	ART 134	3
Total General Education Credits		**22/23**

Design/Interior Design Core (40 CR)

History of Design	DSN 110	3
Drawing 1 - AFA	ART 122	3
Two Dimensional Design - AFA	ART 130	3
Color Theory - AFA	ART 131	3
Three Dimensional Design -AFA	ART 132	3
Drawing for Designers	DSN 165	3

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Design Rendering	DSN 125	3
Design Concepts I	DSN 120	3
Design Concepts II	DSN 220	3
Portfolio Presentation	ART 230	3
CAD I (for Designers)	ENR 117	2
CAD II (for Designers)	ENR 118	2
Design Elective		3
Design Elective		3
Total Core Credits		**40**
Total Program Credits		**62/63**

Drama

An Option within Fine Arts

General Education Foundation (20 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3 CR)		**3**
Social Science or Humanities (3 CR)		**3**
General Education Electives (8 CR)		**8**
Total General Education Credits		**20**

Drama Core (40 CR)

Acting I – AFA	DRA 110	3
Acting II – AFA	DRA 112	3
Acting III – AFA	DRA 210	3
Acting IV – AFA	DRA 212	3
History of Theatre I	ENG 233	3
History of Theatre II	ENG 234	3
Drama Workshop	DRA 114	3
Dramatic Performance I	DRA 116	1
Dramatic Performance II	DRA 118	1
Dramatic Performance III	DRA 216	1
Dramatic Performance IV	DRA 218	1
Intro. to Technical Theatre	DRA 224	3
Movement for the Actor	DRA 222	3
Voice for the Actor	DRA 220	3
Directing	DRA 229	3
Dev. of Musical Theatre	MUS 133	3
Free Electives		4
Total Core Credits		**44**
Total Program Credits		**64**

Visual Arts

An Option within Fine Arts

The AFA Visual Arts option offers students a solid foundation for advanced study in the areas of Studio Art (Drawing, Painting, Sculpture, Ceramics), Art Education, Art History and Art Therapy. Students may take studio electives in a variety of media or choose to specialize in one. The Visual Arts curriculum is designed for transfer into BFA and B.A. degree programs in Fine Arts, Art Education, Art Therapy, Art History, Photography, Design and Graphic Design at four-year colleges, universities, schools of design and institutes of art.

If you are considering a career in teaching, please read about the County College of Morris Teacher Education Specialization in Visual Arts.

General Education Foundation (25/26 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (7/8 CR)		**7/8**
Choose from General Education course list		
Mathematics Elective		3
Laboratory Science Elective		4
Technology		0-1
Social Science (3 CR)		
General Psychology	PSY 113	3
or		
Principles of Sociology	SOC 120	
General Education Courses (9 CR)		
Art History I	ART 133	3
Art History II	ART 134	3
Speech Fundamentals	ENG 109	3
Total General Education Credits		**25/26**

Visual Arts Core (36 CR)

Drawing I—AFA	ART 122	3
Drawing II—AFA	ART 123	3
Figure Drawing—AFA	ART 124	3
Two-Dimensional Design – AFA	ART 130	3
Color Theory—AFA	ART 131	3
Three-Dimensional Design—AFA	ART 132	3
Painting I	ART 219	3
Sculpture I	ART 228	3
Ceramics I	ART 241	3
Portfolio and Presentation	ART 230	3
Visual Arts Electives		6
Total Core Credits		**36**
Total Program Credits		**61/62**

Fire Science Technology

Associate in Applied Science Degree

This program is for individuals interested in such public sector careers as municipal firefighters, fire inspectors, fire investigators, fire technicians and fire protection engineers. Opportunities in the private sector include industrial firefighters, fire protection specialists, fire protection engineers, fire investigators and loss control consultants. Potential employers for graduates of this program would be governmental agencies, private industry, fire equipment manufacturers and vendors, and the insurance industry.

Graduates are expected to:

- Have a working understanding of the field of Fire Science
- Understand fire safety codes, code enforcement and effective inspection
- Identify fire pattern, cause, origins and arson
- Understand and evaluate the organization and management of fire service systems
- Develop skills in using the most advanced fire science technology

This is a joint offering with Passaic County Community College (PCCC). The technical core* of the Fire Science curriculum is offered by PCCC to County College of Morris (CCM) students as online courses or via the college's Inter-Active Television (ITV) system. CCM students can choose to travel to PCCC's state-of-the-art facility in Passaic County Public Safety Academy in Wayne. The remaining courses are offered through CCM.

General Education Foundation (21/22 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3/4 CR)		
Basic Statistics	MAT 108	3
or		
Statistics	MAT 124	3
or		
Probability & Statistics	MAT 130	4
Social Science (3 CR)		
General Psychology	PSY 113	3
General Education (9 CR)		
Principles of Sociology	SOC 120	3
Diversity Elective		3
Technology Elective		3
Total General Education Credits		**21/22**

Fire Science Technology Core (39/40 CR)

Introduction to Fire Science	FST 101	3
Fire Prevention and Related Codes	FST 102	3
Fire Service Management	FST 201	3
Hazardous Materials	FST 202	3
Fire Protection, Building Construction	FST 204	3
Current Issues in Fire Science/ Capstone Experience	FST 210	3
Fire Science Electives		15/16
Biology of Environmental Concerns	BIO 127	4
or		
Meteorology	PHY 118	
Health and Wellness		2
Total Core Credits		**39/40**
Total Program Credits		**60/62**

** Courses with FST designation.*

Graphic Design

Associate in Applied Science Degree

The Graphic Design program prepares students for entry-level positions as graphic designers, production artists, junior art directors, web production artists, web site designers and other entry-level interactive media positions.

Majors can also graduate and transfer to a four-year college, university or art school with a portfolio that makes a difference. Students get a personal portfolio review at least twice before graduation. Graphic design courses include constantly advancing technology. Students learn creative problem solving, critical thinking, presentation skills, computer skills and get a real-world experience. Students take foundation courses in art and graphic design and select electives in advertising, magazine production, web-page design, animation, video, television graphics, digital photography, illustration, interior design and more.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

General Education Foundation (21/23 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (6/7 CR)		
Choose from General Education course list		
Mathematics		3
Laboratory Science (4 CR for transfer students)		
Science (3 CR for non-transfer students)		3/4
Technology		0/1
Social Science or Humanities (3 CR)		
Choose from General Education course list		3
General Education Electives (6 CR)		
Art History I	ART 133	3
Art History II	ART 134	3
Total General Education Credits		**21/23**

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Visual Arts Core (43 CR)

History of Graphic Design (Required)	GRD 110	3
Drawing I—AFA	ART 122	3
Two-Dimensional Design—AFA	ART 130	3
Photography I	PHO 115	3
Graphic Design I	GRD 120	3
Graphic Design II	GRD 220	3
Introduction to Computer Graphics	GRD 111	3
Electronic Prepress	GRD 116	3
Typography I	GRD 118	3
Typography II	GRD 218	3
Internship/Cooperative Work Experience	GRD 232	3
Internship/Co-op Related Class	GRD 229	1
Portfolio Project	GRD 227	3
Brochure and Magazine Design	GRD250	3
Graphic Design Elective		3
Total Core Credits		**43**

Total Program Credits **64/66**

Honors Study

County College of Morris offers both full- and part-time students the opportunity to take Honors courses and/or earn an Honors degree in their major or program of study. Honors courses are offered in the more general academic areas that are requirements for most majors. They are designed to help superior students develop their special talents, interact with other individuals of similar abilities, and enjoy an intensive and stimulating learning atmosphere. Those who qualify may take as many Honors courses as desired.

An Honors degree provides exceptional students with unique study and learning opportunities to prepare them for highly specialized fields of work or transfer to the best colleges and universities in the United States. To earn an Honors degree, students enrolled in Associate in Applied Science programs must complete 16 credits of Honors courses distributed among the areas of communications, humanities, social science, mathematics and science. Students enrolled in Associate in Arts, Associate in Fine Arts, and Associate in Science programs must complete 21 credits distributed among the same disciplines.

Both Honors degree candidates and those students who decide to take various Honors courses meet regularly with the Honors adviser, become part of a small community of scholars engaged in sophisticated levels of inquiry, and can apply for Honors scholarships set aside for academic excellence. Special recognition of Honors study is indicated on student transcripts and on the diplomas of those who attain the degree.

Students can apply to take Honors courses or seek an Honors degree directly from high school or while enrolled at the college. Admission from high school requires an SAT score of at least 1170 or ACT equivalent and/or graduation in the top 20 percent of the class. Current students can contact the Honors adviser to determine their eligibility.

For complete details about an Honors degree, the courses of study, application and scholarship information, please contact the Honors adviser.

Hospitality Management

Associate in Applied Science Degree

The hospitality industry encompasses the hotel, restaurant, travel, tourism, and leisure management industries as well as other fields. This degree focuses on the areas of lodging such as luxury, convention, all-suite, casino and resort hotels. Students may also elect to study travel and tourism; meeting and event planning and management; bar and beverage management and hospitality marketing. The Hospitality Management program provides academic and practical training for those students interested in future management positions. Transfer opportunities are available for those who wish to complete a bachelor's degree in this field. Students may also participate in a paid cooperative work experience which delivers valuable practical management and technical training.

General Education Foundation (21/23 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (6/8 CR)		
Math Elective		3/4
Laboratory Science/Technology Elective		3/4
Social Science or Humanities (3 CR)		
Choose from General Education course list		3
General Education Electives (6 CR)		
Elements of Economics	ECO 113	3
or		
Principles of Economics	ECO 211	
General Education Elective		3
Total General Education Credits 21/23		

Hospitality/ Business Core (41CR)

Serv-Safe Food Handling	HOS 100	1
Introduction to Food	HOS 101	3
Food Management	HOS 102	3
Food Production	HOS 103	3
Success in Hospitality	HOS 106	1
Introduction to Hospitality Industry	HOS 118	3
Human Resource Mgt. in the Hospitality Ind.	HOS 211	3
Food & Beverage Purchasing Cost Control	HOS 213	3
Cooperative Education Work Experience	HOS 223	3

Elements of Accounting	ACC 110	3
or		
Principles of Accounting	ACC 111	
Introduction to Business	BUS 112	3
Business Law I	BUS 213	3
Hospitality Elective		3
HOS Restricted Elective (Choose 2)		6
Hotel/Hospitality Management	HOS 120	3
Marketing and Event Planning	HOS 201	3
Bar & Beverage Service Management	HOS 215	3
Travel and Tourism	HOS 232	3
Total Core Credits		**41**
Total Program Credits		**62/64**

Restaurant & Culinary Management (NRAEF Certification)

A Hospitality Management Option
Associate in Applied Science Degree

The hospitality industry is constantly changing which opens a multitude of opportunities for careers in this field. This option, within the Hospitality Management program, provides students with a focused approach to the largest segment of the hospitality industry. It also allows individual interest to drive the field of study. In this program, students have the opportunity to elect 6 credits towards exploring different areas of the hospitality industry. These may include restaurant management, culinary arts management, banquet planning, world travel and international cuisines. Upon completing this program, students enter the restaurant and culinary fields with an understanding of the work required to be successful and enthusiastic about their chosen field. Selected courses are recognized as National Restaurant Association ManageFirst Certificate courses.

General Education Foundation (21/23 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science Technology (6/8 CR)		
Math Elective		3/4
Laboratory Science/Technology Elective		3/4
Social Science or Humanities (3 CR)		**3**
General Education Electives (6CR)		
Choose from General Education Course List		
Elements of Economics	ECO 113	3
or		
Principles of Economics	ECO 211	
General Education Elective		3
Total General Education Credits		**21/22**

Hospitality/Business Core (41 CR)

Serv-Safe Food Handling	HOS 100	1
Introduction to Food	HOS 101	3
Food Management	HOS 102	3
Food Production	HOS 103	3
Success in Hospitality	HOS 106	1
Introduction to the Hospitality Industry	HOS 118	3
Dining Room Management	HOS 210	3
or		
Cooperative Education Work Experience	HOS 223	
Human Resource Mgt. in the Hospitality Ind.	HOS 211	3
Food & Bev Purchasing & Cost Control	HOS 213	3
Elements of Accounting	ACC 110	3
or		
Principles of Accounting	ACC 111	
Introduction to Business	BUS 112	3
Business Law I	BUS 213	3
HOS Electives		9
Total Core Credits		**41**
Total Program Credits		**62/64**

Restaurant Management and Event Planning

A Hospitality Management Certificate of Achievement

This Certificate of Achievement provides a concise and accelerated approach to restaurant management, the largest segment of the hospitality industry. It is offered primarily to current and future industry professionals seeking national certification from the NRAEF ManageFirst program. In addition, this combination of skills provides the perfect basis for individuals interested in the field of event planning. Event planning brings imagination and creativity to business and social events in an entrepreneurial setting.

Serv-Safe Food Handling	HOS 100	1
Food Management	HOS 102	3
Marketing and Event Planning	HOS 201	3
Human Resources in the Hospitality Industry	HOS 211	3
Food & Beverage Purchasing & Cost Controls	HOS 213	3
Total Certificate Credits		**13**

Landscape and Horticultural Technology

Associate in Applied Science Degree

Named one of the top six Outstanding Post-Secondary Agriculture Programs in the United States by the National Association of Agricultural Educators, the Landscape and Horticultural Technology (LHT) program at County College of Morris (CCM) provides students with the technical knowledge and practical skills to succeed in a wide range of horticultural related professions.

With a primary focus on ornamental horticulture, the program offers students the opportunity to earn an Associate in Applied Science degree through the Landscape Management and Design option, Turf and Turfgrass Management option, or the Agribusiness option.

The program also provides students who have very focused career goals with the choice of earning Certificates of Achievement in Landscape Design, Grounds Maintenance, Landscape Contracting, Garden Center Management, or Horticultural Apprenticeship Certificates in Horticulturist, Landscape Technician or Landscape Management Technician. These certificates are designed specifically to meet the needs of students who may be currently employed and want to enhance their skill set or for those who already hold baccalaureate or associate degrees in other areas. Certificates of Achievement may also be desirable for students who are making a career change and want or need to earn a credential as quickly as possible.

Each option is designed to prepare students for employment in specialized occupations in the field of agriculture, horticulture and ornamental horticulture.

The Agribusiness option prepares students for careers in horticulture business operations including retail and wholesale endeavors, service businesses, retail and wholesale equipment suppliers, and floral shops.

The Landscape Management and Design option prepares students to become professional landscape designers or specialists in the design and installation of landscapes in both the residential and commercial markets.

The Turf and Turfgrass Management option is specifically structured to prepare students to become professional turf managers of commercial complexes, sports turf, recreational turf and golf courses.

The emphasis in each option is on the development of professional attributes, problem-solving capability and strong technical skills. Students are provided opportunities to develop leadership ability and entrepreneurial skills as well as skills in management.

Graduates of the Landscape and Horticultural Technology program can find employment as landscape designers, landscape installers, managers and supervisors, golf course superintendents, grounds maintenance supervisors and much more. Upon completion of the associate's degree, students may also elect to transfer to a four-year institution to further their education. The Department of Landscape and Horticultural Technology has an articulation agreement with Delaware Valley College which provides CCM-LHT graduates a guarantee of junior status as long as they meet the minimum grade point criteria.

Agribusiness

A Landscape and Horticultural Technology Option

This option provides career preparation in the skills needed to work in horticultural related service industries as well as in both wholesale and retail sales of horticultural products. The option is ideal for those who love the business aspect of the horticultural field but who do not feel drawn to designing and for those with a desire to be actively involved in sales positions. This option includes a strong emphasis on both horticultural technical knowledge as well as business management skills. Career opportunities are varied and, in addition to retail and wholesale nurseries, include equipment suppliers, landscape product suppliers, fertilizer and pesticide sales, as well as business management related to design build companies.

General Education Foundation (20/21 CR)		
Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3/4 CR)		
Math for Liberal Arts	MAT 120	4
or		
College Algebra	MAT 110	3
Social Science or Humanities (3 CR)		
Choose from General Education course list		3
General Education Electives (8 CR)		
Biology of Environmental Concerns	BIO 127	4
Introduction to Chemistry Lecture	CHM 117	3
Introduction to Chemistry Lab	CHM 118	1
Total General Education Credits		**20/21**
Landscape Management and Design Core (46 CR)		
Plant Science	LHT 110	3
Introduction to Horticulture	LHT 111	4
Landscape Plant Identification	LHT 114	3
Herbaceous Plants	LHT 108	3
or		
Grounds Maintenance	LHT 124	
or		
Introduction to Turf Management	LHT 101	
Horticultural Computer Software Applications	LHT 115	3
Plant Pest Management	LHT 215	4
Landscape Construction	LHT 231	3
Irrigation Systems	LHT 235	4
Landscape Estimating and Specification	BUS 205	3
Horticultural Soils	LHT 116	4
Business Electives		9
Cooperative Agricultural Experience	LHT 233	3
Total Core Credits		**46**
Total Program Credits		**66/67**

Due to continual program revisions mandated by the accrediting agencies and/or changes in state mandated requirements, students should consult their academic advisors when selecting courses. Students must complete all remediation including MAT 011, MAT 014, MAT 016 and ENG 025 before beginning LHT 116, LHT 215 and LHT 235.

Landscape Management and Design

A Landscape and Horticultural Technology Option

This option provides career preparation in the skills needed to design, build and manage ornamental and natural landscapes. The option is ideal for those with an artistic flair who also enjoy working outdoors and for anyone who derives satisfaction from building and completing projects. Students in this option learn to measure, analyze, draw and install landscapes. Hands-on activities are provided whenever possible. Career opportunities abound for the landscape designer and opportunities to either work for or develop a landscape design and build company are also tremendous. Because all students in this option also learn technical aspects of landscape installation, graduates are in much demand as skilled technicians in landscape and plant material installation. Graduates of this option may also elect to transfer into a Landscape Architecture program, enrolling in a bachelor's or master's degree program.

General Education Foundation (20/21 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3/4 CR)		
Math for Liberal Arts	MAT 120	4
or		
College Algebra	MAT 110	3
Social Science or Humanities (3 CR)		
Choose from General Education course list		3
General Education Electives (8 CR)		
Biology of Environmental Concerns	BIO 127	4
Intro to Chemistry	CHM 117	3
Intro to Chemistry Lab	CHM 118	1
Total General Education Credits		20/21

Landscape Management and Design Core (46 CR)

Plant Science	LHT 110	3
Introduction to Horticulture	LHT 111	4
Landscape Plant Identification	LHT 114	3
Herbaceous Plants	LHT 108	3
Grounds Maintenance	LHT 124	3
Horticultural Computer Software Applications	LHT 115	3
Plant Pest Management	LHT 215	4
Landscape Construction	LHT 231	3
Irrigation Systems	LHT 235	4
Landscape Design and Planning I	LHT 211	3
Landscape Design and Planning II	LHT 212	3
Landscape Estimating & Specifications	BUS 205	3
Horticultural Soils	LHT 116	4
Cooperative Agricultural Experience	LHT 233	3
Total Core Credits		**46**

Total Program Credits **66/67**

Due to continual program revisions mandated by the accrediting agencies and/or changes in state mandated requirements, students should consult their academic advisors when selecting courses. Students must complete all remediation including MAT 011, MAT 014, MAT 016 and ENG 025 before beginning LHT 116, LHT 211, LHT 212, LHT 215 and LHT 235.

Turf and Turfgrass Management

A Landscape and Horticultural Technology Option

This option provides career preparation in the skills needed to manage large turf areas including golf courses, sports turf and both active and passive recreational turf areas. The option is ideal for those who enjoy sports or who have participated in sports and want to find a rewarding career that provides continued contact with sports-related activities. Technical skills including understanding turfgrass physiology and morphology, soils management, installation techniques and grounds management are all included in this course of study. Additionally, management and problem-solving skills are also an integral component of this option. Graduates of the Turf and Turfgrass Management program are prepared for entry into a career in turf management or may choose to transfer to a four-year program in turf science.

General Education Foundation (20/21 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3/4 CR)		
Math for Liberal Arts	MAT 120	4
or		
College Algebra	MAT 110	3
Social Science or Humanities (3 CR)		**3**
Choose from General Education course list		
General Education Electives (8 CR)		
General Biology I	BIO 121	4
and		
General Biology II	BIO 122	4
or		
General Chemistry I Lecture & Lab	CHM	125/126
and		
General Chemistry II Lecture & Lab	CHM	127/128
Total General Education Credits		**20/21**

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Landscape Management and Design Core (46 CR)

Introduction to Turf Management	LHT 101	3
Herbaceous Perennials	LHT 108	3
Plant Science	LHT 110	3
Introduction to Horticulture	LHT 111	4
Landscape Plant Identification	LHT 114	3
Horticultural Computer Software Applications	LHT 115	3
Grounds Maintenance	LHT 124	3
Plant Pest Management	LHT 215	4
Landscape Construction	LHT 231	3
Irrigation Systems	LHT 235	4
Cooperative Agricultural Experience	LHT 233	3
Landscape and Turf Installation	LHT 234	3
Horticultural Soils	LHT 116	4
Free Elective		3
Total Core Credits		**46**

Total Program Credits **66/67**

Due to continual program revisions mandated by the accrediting agencies and/or changes in state mandated requirements, students should consult their academic advisors when selecting courses. Students must complete all remediation including MAT 011, MAT 014, MAT 016 and ENG 025 before beginning LHT 116, LHT 215, and LHT 235.

Landscape and Horticultural Design

Certificates of Achievement

The Landscape and Horticultural Technology Certificates of Achievement are designed for current or future professionals who want to improve their technical knowledge and skills in any of the four certificate areas. Each curriculum is balanced with theory and hands-on experiences. Students complete projects using the greenhouses, the plant preparation laboratory, the landscape design studio, the computer laboratory and the horticultural shop. The four certificate areas are: Landscape Design, Grounds Maintenance, Landscape Contractor and Garden Center. The Certificates of Achievement are designed primarily for part-time students who are currently working or plan to work in one of these areas. It is possible to complete any certificate within three years utilizing evening classes or within a shorter period of time with day classes or a combination of face-to-face and online or hybrid classes. Students with diverse career goals may earn more than one certificate.

• Landscape Design

A Certificate of Achievement within Landscape and Horticultural Technology

Herbaceous Plants	LHT 108	3
Plant Science	LHT 110	3
Landscape Plant I.D. Mgmt. & Use	LHT 114	3
Landscape Design & Planning I	LHT 211	3
Landscape Design & Planning II	LHT 212	3
Landscape Specifications and Estimating	BUS 205	3
Total Certificate Credits		**18**

• Grounds Maintenance

A Certificate of Achievement within andscape and Horticultural Technology

Plant Science	LHT 110	3
Plant Pest Management	LHT 215	4
Grounds Maintenance & Development	LHT 124	3
Introduction to Horticulture	LHT 111	4
Horticultural Soils	LHT 116	4
Total Certificate Credits		**18**

• Landscape Contractor

A Certificate of Achievement within Landscape and Horticultural Technology

Plant Science	LHT 110	3
Landscape Plant I.D. Mgmt. & Use	LHT 114	3
Landscape Design & Planning I	LHT 211	3
Horticultural Soils	LHT 116	4
Landscape Specifications and Estimating	BUS 205	3
Landscape Construction	LHT 231	3
Total Certificate Credits		**19**

• Garden Center

A Certificate of Achievement within Landscape and Horticultural Technology

Plant Science	LHT 110	3
Plant Pest Management	LHT 215	4
Landscape Plant I.D. Management and Use	LHT 114	3
Introduction to Horticulture	LHT 111	4
Business Elective*		3
Herbaceous Plants	LHT 108	3
Total Certificate Credits		**20**

Horticultural Apprenticeship Programs

The Horticultural Apprenticeship Program involves a three-way partnership between the student, an employer and the Landscape and Horticultural Technology Program teaching staff. Unique among LHT Certificates of Achievement, these options require that the student be employed throughout the education-

al process and that the employer serves as an on-the-job mentor to the student. Students enrolled in the Apprenticeship Program must be employed by an employer who has registered with their local county Apprentice Coordinator. Upon completion of all course requirements, students receive a certificate of completion from County College of Morris and upon completion of all work processes receive an Apprentice Certification from the State of New Jersey, Department of Labor.

• Landscape Management Technician

ONE-YEAR OPTION

Plant Science	LHT 110	3
Plant Pest Management	LHT 215	
or		
Horticultural Soils	LHT 116	4
Landscape Plant I.D. Mgmt. & Use	LHT 114	3
Introduction to Horticulture	LHT 111	4
or		
Grounds Maintenance & Development	LHT 124	3
or		
Business Elective*		3
Total Certificate Credits		**13/14**

• Landscape Technician

TWO-YEAR OPTION: Students must complete all courses in the One-Year LMT or receive equivalent credit for those courses prior to starting this program.

Landscape Construction	LHT 231	3
Horticultural Computer Software Applications	LHT115	3
Plant Pest Management	LHT 215	4
Horticultural Soils	LHT 116	4
Total Certificate Credits		**27/28**

• Horticulturist

THREE-YEAR OPTION: Students must complete all courses in the Two-Year LT (including all LMT courses) or receive equivalent credit for those courses prior to starting this program.

Landscape Design & Planning I	LHT 211	3
Landscape Design & Planning II	LHT 212	3
Landscape Specifications and Estimating	BUS 205	3
Math Elective*		3
Communications Elective*		3
Business Elective*		3
Total Certificate Credits		**45/46**

**Students should consult their academic advisors when selecting these courses.*

Liberal Arts and Sciences

Associate in Arts Degree

These university-parallel curricula are designed to meet the basic requirements of the first two years of college programs for students who plan to graduate and transfer to a four-year college or university to study for the baccalaureate degree. The curricula offer a wide range of flexibility in terms of a student's ultimate educational goals and provide adequate preparation for further study leading to professional competence in specialized fields.

These programs also accommodate individuals seeking two years of a liberal higher education.

The program offers options in Human Services, Humanities/International Studies, Humanities/Broadcasting Arts and Technology, Humanities/Media Studies–Journalism, Humanities/Music, and Humanities/Social Science.

Broadcasting Arts and Technology, Media Studies

An Option within Liberal Arts and Sciences

After attaining a degree in Broadcasting Arts and Technology, Media Studies, students are prepared to transfer and complete degree requirements in communications, media or broadcasting. This program focuses on developing media skills and offers technical applications in the areas of television and multimedia. The Broadcasting Arts and Technology emphasis provides opportunities for a supervised media internship in a specialized broadcasting area.

General Education Foundation (45 CR)

Communication (9 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3
Math-Science-Technology (12 CR)		
Math for Liberal Arts	MAT 120	4
or		
Probability & Statistics	MAT 130	4
Laboratory Science Elective		4
Computer Technology & Applications	CMP 126	4
Social Science (6 CR)		
Principles of Sociology	SOC 120	3
General Psychology	PSY 113	3
Humanities (9 CR)		
Language/Literature Sequence		6
Humanities Elective		3
Choose from General Education course list		
History (6 CR)		**6**
Diversity (3 CR)		**3**
Choose from General Education Course List		
Total General Education Credits		**45**

Continued on next page

Broadcasting Arts and Technology Core (18/19 CR)

Media Aesthetics	MED 114	3
Introduction to Broadcasting	MED 117	3
Digital Video Editing	MED 210	3
Television Production I	MED 211	3
Television Production II	MED 212	3
Media or Communications Elective		3/4
Total Core Credits		**18/19**
Total Program Credits		**63/64**

Human Services

An Option within Liberal Arts and Sciences

Historically the system of Human Services responded primarily to the needs of the poor. Today the system is quite diverse and responds to many human needs. A limited list of areas includes drug and alcohol rehabilitation, child and spousal abuse, medical social services, care of the mentally retarded, community mental health, school social services and corrections. Services can be provided through several techniques, such as case work, group work and community organization.

The Human Services option allows the student a specialization in various areas of social welfare. The course material provides an understanding of the values and principles of professional practice, a study of how policies are formed and implemented, and a realization of the various human needs which develop in modern societies and how they are responded to by human service agencies and providers. In addition, opportunities exist for students to do volunteer work with local agencies. Students are advised by faculty in the Sociology, Economics and Anthropology Department.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

General Education Foundation (45 CR)

Communication (9 CR)

English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3

Math-Science-Technology (12 CR)

Statistics	MAT 124	3
Mathematics Elective		3/4
or		
Laboratory Science Electives		4-8
Technology		0-4

Social Science (6 CR)

Principles of Sociology	SOC 120	3
General Psychology	PSY 113	3

Humanities (9 CR)

Choose from General Education course list	9

History (6 CR)

History of the African-American Experience	HIS 204	3
History of American Women	HIS 209	3

Diversity (3CR)

Contemporary Social Issues	SOC 202	3
Total General Education Credits		**45**

Human Services Core (18 CR)

Introduction to Social Welfare	HMS 215	3
Human Needs and Social Services	HMS 216	3
Community Mental Health	PSY 229	3
The Family	SOC 209	3
Principles of Economics I	ECO211	3
History of Minorities	HIS 203	3
Total Core Credits		**18**
Total Program Credits		**63/66**

Humanities/Social Science

An Option within Liberal Arts and Sciences

The Liberal Arts Humanities/Social Science program is an ideal foundation for transfer to four-year colleges and universities in a wide variety of majors including English, history, languages, economics, psychology, sociology, communications, global studies, political science and many other fields. It is considered a starting point for careers in law, education, science, government and human services or for those whose academic interests are in the specialized areas of the social sciences or humanities. After receiving the associate's degree, students in this program generally transfer to earn a bachelor's degree. The program especially accommodates students who wish to focus on general education classes or who want to take college-level courses for their own enrichment. Students uncertain of their career goals are offered an opportunity for exploration within this program.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

If you are considering a career in teaching, please read about the County College of Morris Teacher Education Specializations in English, History, Psychology, Sociology and Spanish.

General Education Foundation (45 CR)

Communications (9 CR)

English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3

Math-Science-Technology (12 CR)

Choose from General Education course list	
Mathematics	3-8
Laboratory Science	4-8
Technology	0-4

Social Science (6 CR)		
General Psychology	PSY 113	3
Principles of Sociology	SOC 120	3
Humanities (9 CR)		
Choose from General Education course list		9
History (6 CR)		
Choose from General Education course list		6
Diversity (3 CR)		
Choose from General Education course list		3
Total General Education Credits		**45**

Liberal Arts Core (18 CR)		
Literature Survey or Language Sequence		3
Restricted Elective		15
Total Core Credits		**18**
Total Program Credits		**63**

International Studies

An Option within Liberal Arts and Sciences

The program provides students with the general education course work and background in international studies needed to transfer to a similar program at a four-year institution. It is ideal for students whose career goals are in the fields of international affairs, diplomacy, foreign languages and cultures, teaching and/or research.

General Education Foundation (45 CR)		
Communications (9 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3
Math-Science-Technology Options (12 CR)		
Choose from General Education Course List		
Mathematics		3-8
Laboratory Science		4-8
Technology		0-4
Social Science (6 CR)		
General Psychology	PSY 113	3
Principles of Sociology	SOC 120	3
Humanities (9 CR)		
Literature Survey Electives		6
Choose from General Education course list		3
History (6 CR)		
Choose from General Education course list		6
Diversity (3 CR)		**3**
Choose from General Education course list		
Total General Education Credits		**45**

International Studies Core (18 CR)		
Intercultural Communication	ISA 110	3
Cultural Geography	SOC 108	3
Modern Language		12
Total Core Credits		**18**
Total Program Credits		**63**

Journalism, Media Studies

An Option within Liberal Arts and Sciences

The program in Journalism prepares students to transfer and complete degree requirements in communications or journalism. This program draws upon many areas of humanities which develop communication skills and offers contact with technical application. The Journalism emphasis allows some degree of specialization.

General Education Foundation (45 CR)		
Communications (9 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3
Math-Science-Technology (12 CR)		
Probability and Statistics	MAT 130	4
Laboratory Science Elective		4
Computer Information Literacy	CMP 101	1
Communications & Technology	CMP 127	3
Social Science (6 CR)		
Principles of Sociology	SOC 120	3
Political Science Elective		3
Humanities (9 CR)		
Choose from General Education course list		
Literature Survey or Language Sequence		6
Humanities Elective		3
History (6 CR)		
Choose from General Education course list		6
Diversity (3 CR)		
Intercultural Communication	ISA 110	3
Total General Education Credits		**45**

Journalism Core (18 CR)		
Introduction to Mass Media	COM 115	3
Introduction to Journalism Newswriting	COM 111	3
Advanced Journalism Reporting	COM 112	3
Editing & Publication Design	COM 209	3
Media or Communications Elective		3
Criminal Justice Elective		3
Total Core Credits		**18**
Total Program Credits		**63**

Music

An Option within Liberal Arts and Sciences

The Music program includes background courses in the Humanities/Social Sciences offered by most four-year institutions in the first and second years. It prepares students to transfer to programs in primary and secondary school music, music therapy and performance degrees. All students must pass a theory placement exam or register for MUS 011 Basic Musicianship and MUS 176 Aural Comprehension during the first semester.

Students must receive a grade of C or better in MUS 011 to register for MUS 117. Any student who receives a grade of D in any music core course must repeat the course and is required to see the Music department chair before registering for the next semester.

Please note: All music majors must register for AMS-Piano (MUS 125 and 126, 225 and 226) unless their primary instrument is piano in which case students must register for AMS-Voice (MUS 109 and 110, 209 and 210).

General Education Foundation (45 CR)

Communication (9 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3
Math-Science-Technology (12 CR)		
Choose from General Education course list		
Mathematics		3-8
Laboratory Science		4-8
Technology		0-1
Social Science (6 CR)		
General Psychology	PSY 113	3
Principles of Sociology	SOC 120	3
Humanities (9 CR)		**9**
Choose from the following General Education Humanities–Music Electives		
American Music	MUS 114	3
Enjoyment of Music	MUS 248	3
Music History & Lit to 1750	MUS 217	3
Music History & Lit from 1750	MUS 218	3
Contemporary Music	MUS 258	3
History (6 CR)		
Choose from General Education course list		6
Diversity (3CR)		
World Music and Culture	MUS 143	3
or		
Rock History and Culture	MUS 164	
or		
Jazz History and Styles	MUS 150	
Total General Education Credits		**45**

Musical Core (23 CR)

Music Theory I, II	MUS 117,118	6
Music Theory III, IV	MUS 215,216	6
Applied Music Primary I, II	MUS 135,136	2
Applied Music Primary III, IV	MUS 137,138	2
Applied Music Secondary I, II	MUS 125,126	
or	MUS 109, 110	2
Applied Music Secondary III, IV	MUS 225,226	
or	MUS 209, 210	2
Chamber Choir I, II	MUS 145,146	2
Chamber Choir III	MUS 147	1
Total Core Credits		**23**
Total Program Credits		**68**

Musical Theatre

An Option within Liberal Arts and Sciences

This unique major for aspiring performers is designed for students who want to excel in "the triple threat" of music, performance and dance. The program provides a foundation to transfer and earn a Bachelor of Music, Bachelor of Arts or a Bachelor of Fine Arts degree. Musical Theatre majors learn to read music and audition with enough proficiency to transfer to a four-year institution or audition for legitimate theater.

All students must pass a theory placement exam or register for MUS 011 Basic Musicianship and MUS 176 Aural Comprehension during the first semester. Students must receive a grade of C or better in MUS 011 to register for MUS 117. Any student who receives a grade of D in any Music Core course must repeat the course and is required to see the Music department chair before registering for the next semester.

Please note: All music majors must register for AMS-Piano (MUS 125 and 126, 225 and 226) unless their primary instrument is piano in which case students must register for AMS-Voice (MUS 109 and 110, 209 and 210).

General Education Foundation (45 CR)

Communication (9 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3
Math-Science-Technology (12 CR)		
Choose from General Education course list		
Mathematics		3-8
Laboratory Science		4-8
Technology		0-1
Social Science (6 CR)		
General Psychology	PSY 113	3
Principles of Sociology	SOC 120	3

Humanities (9 CR)		
Development of Musical Theater	MUS 133	3
American Music	MUS 114	3
Contemporary Music	MUS 258	3
History (6 CR)		
Choose from General Education course list		6
Diversity (3CR)		
World Music and Culture	MUS 143	3
or		
Jazz History and Styles	MUS 150	
Total General Education Credits		**45**

Musical Theatre Core (23 CR)		
Music Theory I	MUS 117	3
App Mus Sec-Voice I	MUS 109	1
Piano I-II	MUS 152,153	2
Chamber Choir I, II, III, IV	MUS 145-148	4
Applied Music Primary I & II	MUS 135,136	2
Operetta and Musical Theatre I-IV	MUS 227-230	4
Musical Theatre Auditions	MUS 243	3
Acting I	DRA 110	3
Dance for Musical Theatre	DAN 146	1
Total Core Credits		**23**
Total Program Credits		**68**

Mechanical Engineering Technology

Associate in Applied Science Degree

The Mechanical Engineering Technology program is a two-year career-oriented curriculum preparing students for positions as engineering technicians in the design, production and testing of machines, tools and manufactured products. Job activities center on technical problem solving and the practical application of engineering knowledge.

The specific educational objectives of the Mechanical Engineering Technology program are to: 1) produce graduates who are employed and operate effectively in positions that lie between those of the skilled craftsperson and those of the graduate mechanical engineer, including such positions as mechanical designer, engineering assistant, quality assurance technician, manufacturing engineering assistant and technical sales person; 2) produce graduates who can successfully transfer and complete a baccalaureate degree program in mechanical engineering technology.

After obtaining an Associate in Applied Science degree, it is possible to continue at a four-year college and to complete a Bachelor of Science degree in Engineering Technology. No prior mechanical design experience is necessary to enter the Mechanical Engineering Technology program. Core technology courses are sequenced along with applied mathematics and science to develop a broad background in the field of mechanical technology. Each engineering technology course contains a laboratory, which utilizes modern test instruments and applies classroom theory to practical applications. Cooperative Education, a work-study program with local firms, is available. The Mechanical Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET, www.abet.org.

Articulation Agreements

An existing agreement with New Jersey Institute of Technology (NJIT) provides students in this program with a local transfer opportunity. Students should check with the Transfer Office about other articulation agreements with this program.

General Education Foundation (20 CR)		
Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3 CR)		
College Algebra	MAT 110	3
Social Science or Humanities (3 CR)		
The course must meet both the General Education and Diversity requirements.		3
General Education (8 CR)		
Applied Calculus	MAT 113	4
Precalculus	MAT 123	4
Total General Education Credits		**20**

Mechanical Engineering Core (45 CR)		
Basic Engineering Graphics I	ENR 103	1
Computer-Aided Drafting I	ENR 117	2
Computer-Aided Drafting II	ENR 118	2
Technical Computer Applications	ENR 119	1
Technical Computer Programming	ENR 120	2
Instrumentation and Measurements	ENR 124	2
Computer-Aided Design & Applications	ENR 126	2
Engineering Technology Project	ENR 240	3
Statics	MEC 104	3
Mechanical Prototyping	MEC 117	2
Computer Integrated Manufacturing	MEC 118	2
Materials for Engineering Technology	MEC 110	4
Strength of Materials	MEC 141	3
Machine Design	MEC 236	4
Electricity and Electronics	ELT 201	4
Technical Physics I	PHY 111	4
Technical Physics II	PHY 112	4
Total Core Credits		**45**
Total Program Credits		**65**

Advanced Mechanical Analysis

A Certificate of Achievement within Mechanical Engineering Technology

The Advanced Mechanical Analysis Certificate is designed for present or future professionals who seek to improve their technical knowledge and skills in certain areas. The certificate is balanced with theory and hands-on experience. This certificate provides an advanced introduction to theories and techniques used in mechanical and structural analysis. It's possible to complete the certificate within a year and the courses fully transfer to the AAS degree in Mechanical Engineering Technology.

College Algebra	MAT 110	3
Statics	MEC 104	3
Strength of Materials for Engineering Technology	MEC 141	3
Machine Design	MEC 236	4
Total Certificate Credits		**13**

Assembly and Testing

A Certificate of Achievement within Mechanical Engineering Technology

The Assembly and Testing Certificate of Achievement is designed for present or future professionals who seek to improve their technical knowledge and skills in certain areas. The certificate is balanced with theory and hands-on experience. This certificate provides an introduction to applications used in the assembly and testing of electronic equipment. It's possible to complete the certificate within a year and the courses fully transfer to the AAS degree in Electronics Engineering Technology.

Computer-Aided Drafting I	ENR 117	2
Technical Computer Applications	ENR 119	1
Instrumentation and Measurements	ENR 124	2
Basic Algebra I	MAT 014	N3
or		
Intermediate Algebra	MAT 016	N3
Digital Principles	ELT 110	3
Electronic Fabrication	ELT 210	1
Total Certificate Credits		**9**

Engineering Technology

A Certificate of Achievement within Mechanical Engineering Technology

The Engineering Technology Certificate of Achievement is designed for present or future professionals who seek to improve their technical knowledge and skills in certain areas. The certificate is balanced with theory and hands-on experience. This certificate provides a strong foundation in both electronic and mechanical theories and applications. It's possible to complete the certificate within a year and the courses fully transfer to the Electronics Engineering Technology and Mechanical Engineering Technology degrees.

Students select 14 credits from the following courses:

Materials for Engineering Technology	MEC 110	4
Mechanical Prototyping	MEC 117	2
Computer Integrated Manufacturing (CIM)	MEC 118	2
Digital Principles	ELT 110	3
Active Circuit Components	ELT 115	3
Electricity and Electronics	ELT 201	4
Electronic Fabrication	ELT 210	1
Computer-Aided Drafting I	ENR 117	2
Instrumentation and Measurements	ENR 124	2
Total Minimum Requirement		**14**

Mechanical CAD

A Certificate of Achievement within Mechanical Engineering Technology

The Mechanical CAD Certificate of Achievement is designed for present or future professionals who seek to improve their technical knowledge and skills in certain areas. The certificate is balanced with theory and hands-on experience. This certificate provides a strong foundation in Computer Aided Drafting (CAD) and in manufacturing techniques. It's possible to complete the certificate within a year and the courses fully transfer to the CAD Certificate or the AAS degree in Mechanical Engineering Technology.

Basic Engineering Graphics I	ENR 103	1
Computer-Aided Drafting I	ENR 117	2
Computer-Aided Drafting II	ENR 118	2
Technical Computer Applications	ENR 119	1
Computer-Aided Design and Applications	ENR 126	2
Mechanical Prototyping	MEC 117	2
Computer Integrated Manufacturing (CIM)	MEC 118	2
Technical Elective		3
Total Certificate Credits		**15**

Music Technology

Associate in Science Degree

These specialized career programs are designed to prepare students for entry into the job market or to continue their studies at four-year colleges.

Electronic Music

An Option within Music Technology

The Electronic Music option introduces students to the history, equipment and techniques of composing, arranging and performing music using electronic technology. Students learn theory and have hands-on experience with analog and digital technology, MIDI and General MIDI sampling, sound output systems and tape recording. Students also use computer technology to create electronic music and learn techniques and application of software programs dealing with music recording, notation, sound editors and sound libraries. All students must pass a theory placement exam or register for MUS 011 Basic Musicianship and MUS 176 Aural Comprehension during the first semester.

Students must receive a grade of C or better in MUS 011 in order to register for MUS 117. Any student who receives a grade of D in any music core course must repeat the course and is required to see the Music department chair before registering for the next semester.

Please note: All music majors must register for AMS-Piano (MUS 125 and 126, 225 and 226) unless their primary instrument is piano in which case students must register for AMS-Voice MUS 109 and 110, 209 and 210).

General Education Foundation (30 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (9 CR)		
College Algebra	MAT 110	3
Intro to Data Processing	CMP 110	3
Laboratory Science		4
Social Science (3 CR)		
General Psychology	PSY 113	3
Humanities (3 CR)		
American Music	MUS 114	3
or		
Contemporary Music	MUS 258	
or		
Enjoyment of Music	MUS 248	
or		
Music History & Lit. to 1750	MUS 217	
or		
Music History & Lit. to 1750	MUS 218	
Social Science or Humanities Elective (3 CR)		
Choose from General Education course list (Social Science or Humanities)		3
General Education Electives (6 CR)		
Language Sequence or History		6
Total General Education Credits		**31**

Electronic Music Core (37 CR)

Music Theory I & II	MUS 117, 118	6
Music Theory III & IV	MUS 215, 216	6
Applied Music Primary I, II, III	MUS 135, 136,137	3
Applied Music Secondary I & II	MUS 125, 126	2
or	MUS 109, 110	
Applied Music Secondary III & IV	MUS 225, 226	2
or	MUS 209, 210	
Chorus I, II	MUS 101, 102	2
or		
Chorus I and Ensemble Elective		
Intro to Electronic Music	MUS 112	3
Electronic Music II	MUS 124	3
Hard Disk Recording	MUS 259	2
Independent Study Electronic Music I	MUS 244	1
Independent Study Electronic Music II	MUS 245	1
Intro to Music Business	MUS 166	3
Intro to Music Recording	MUS 165	3
Total Core Credits		**37**
Total Program Credits		**67**

Music Recording

An Option within Music Technology

The Music Recording option introduces students to the equipment and practices used in the recording of contemporary music. Students explore multi-track and live recording techniques with hands-on use of both analog and digital recording equipment. In addition, students learn the application of industry standard hard disk recording and editing software. All students must pass a theory placement exam or register for MUS 011 Basic Musicianship and MUS 176 Aural Comprehension during the first semester. Students must receive a grade of C or better in MUS 011 in order to register for MUS 117. Any student who receives a grade of D in any music core course must repeat the course and is required to see the Music department chair before registering for their next semester.

Please note: All music majors must register for AMS-Piano (MUS 125 and 126, 225 and 226) unless their primary instrument is piano in which case students must register for AMS-Voice MUS 109 and 110, 209 and 210).

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General Education Foundation (30 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (9 CR)		
College Algebra	MAT 110	3
Intro to Data Processing	CMP 110	3
Laboratory Science		4
Social Science (3 CR)		
General Psychology	PSY 113	3
or		
Principles of Sociology	SOC 120	
Humanities (3 CR)		
American Music	MUS 114	3
or		
Contemporary Music	MUS 258	
or		
Enjoyment of Music	MUS 248	
or		
Music History & Lit. to 1750	MUS 217	
or		
Music History & Lit. to 1750	MUS 218	
Social Science or Humanities Elective (3 CR)		
Choose from the General Education course list (Social Science or Humanities)		3
General Education Electives (6 CR)		
Language Sequence or History		6
Total General Education Credits		**31**

Music Recording Core (38 CR)

Music Theory I & II	MUS 117,118	6
Music Theory III & IV	MUS 215,216	6
Applied Music Primary I,II,III	MUS 135,136,137	3
Applied Music Secondary I & II	MUS 125, 126 or MUS 109, 110	2
Chorus I, II	MUS 101, 102	2
or		
Chorus I and Ensemble Elective		
Intro to Recording	MUS 165	3
Music Recording II	MUS 167	3
Microphone Techniques	MUS 180	2
Audio Production Techniques	MUS 182	1
Hard Disk Recording	MUS 259	2
Music Recording Practicum	MUS 249	1
Internship in Music Recording	MUS 250	1
Intro to Music Business	MUS 166	3
Studio Maintenance	ELT 123	3
Total Core Credits		**38**
Total Program Credits		**68**

Nursing

Associate in Applied Science Degree

The Nursing program is fully accredited by the New Jersey Board of Nursing and the National League for Nursing Accrediting Commission. Graduates of the program are granted an Associate in Applied Science degree and attain the academic requirements for application for the National Council Licensure Examination for Registered Nurses (NCLEX-RN). The program offers a balance of general education and Nursing courses to prepare students for Registered Nurse positions. These graduates have a significant role in the delivery of nursing care in hospitals, long-term care facilities, community agencies and other healthcare institutions. Within these facilities, graduates have opportunities to develop their potential and to provide competent nursing care through the application of nursing theory and concepts from the behavioral and natural sciences.

Interested applicants should obtain a Nursing Program Brochure from the Office of Admissions or the Nursing department. Applicants must also complete the application process in the Office of Admissions. Students seeking admission into the professional (clinical) phase of the Nursing program must have a GPA of 2.5 or better and a grade of C or better in all their courses. Licensed Practical Nurses seeking advanced placement must meet criteria established by the Nursing department. The Nursing program at the County College of Morris has technical standards which also must be met. Technical standards are the minimum fundamental abilities that are necessary to perform the activities requisite to obtaining credit for education and subsequent entry-level employment in the nursing profession. All prospective nursing students must meet these technical standards.

Several study tracks have been designed to accommodate individual learning needs. Please see the Nursing Program Brochure for an explanation of the study tracks. The curriculum requirements can be completed in six sequential semesters (excluding summer) of study. Part-time and evening schedules are also offered which will require additional semesters of study. For the professional (clinical) phase, a day class is admitted in the Fall Semester, and an evening class is admitted in the Spring Semester. The Nursing Professional Phase Application Form must be filed in the Office of Records and Registration by September 15 for the Spring Semester and March 1 for the Fall Semester. Students must be accepted for admission by the college before the Nursing Professional Phase Application Form can be filed. All students accepted into the professional (clinical) phase of the program undergo a criminal history background check and drug screening. They also must obtain malpractice insurance at their own expense, obtain health clearance and need to be certified in CPR by the American Heart Association. In addition, students in the professional (clinical) phase of the program are required to carry personal health insurance that provides coverage for accident and sickness. Group health insurance is available through the college or students may purchase individual policies from their own carriers.

All nursing students are required to wear the County College of Morris nursing uniform when in the clinical setting. Uniforms are obtained at the student's expense. Transportation to the clinical facility must be provided by the individual student. Cooperating agencies include: Chilton Memorial Hospital, Genesis Health Care/Troy Hills Center, Hackettstown Regional Medical Center, Kindred Hospital, Morris View Nursing Home,

Atlantic Health System, Somerset Medical Center, St. Barnabas Medical Center, Saint Clare's Health System, The Matheny Medical and Educational Center and numerous community health agencies.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

General Education Foundation (20 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3 CR)		
Introduction to Chemistry	CHM 117	3
Social Science or Humanities (3 CR)		
Choose from General Education course list		3
General Education Electives (8 CR)		
Anatomy & Physiology I	BIO 101	4
Anatomy & Physiology II	BIO 102	4
Total General Education Credits		**20**

Nursing Core (47 CR)

Health & Wellness Elective		2
General Psychology	PSY 113	3
Microbiology	BIO 215	4
Foundations of Nursing	NUR 105	1
Fundamentals of Nursing	NUR 121	6
Basic Medical/Surgical Nursing	NUR 123	10
Maternal-Child/Mental Health Nursing	NUR 213	10
Advanced Medical/Surgical Nursing	NUR 214	10
Nursing Colloquium	NUR 224	1

Prerequisites and Co-requisites

NUR 121: Fundamentals of Nursing
Prerequisite: MAT 014, MAT 016 if indicated
Pre/Co-requisite: BIO 101
Co-requisite: NUR 105

NUR 123: Basic Medical/Surgical Nursing
Prerequisites: NUR 121, BIO 101
Pre/Co-requisites: BIO 102, CHM 117

NUR 213: Maternal-Child/Mental Health Nursing
Prerequisites: NUR 123, BIO 102, CHM 117
Pre/Co-requisite: BIO 215

NUR 214: Advanced Medical/Surgical Nursing
Prerequisites: NUR 213, BIO 215
Co-requisite: NUR 224

Total Core Credits	**47**
Total Program Credits	**67**

Due to continual program revisions mandated by the accrediting agencies and/or changes in state mandated requirements, students should consult their academic advisors when selecting courses.

Science courses completed by students prior to entering Fundamentals of Nursing must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

A statewide criminal record search through the New Jersey State Police and a National Criminal History Database Search is performed on all students upon initial acceptance into the professional phase of the program and annually thereafter. If a record is found as a result of the criminal record searches, admission into the professional phase of the program is denied. If there is no record upon admission but subsequent searches result in a record found, the student will be immediately dismissed from the program.

When a graduate applies for licensure as a nurse in New Jersey, the New Jersey Board of Nursing requires a Criminal History Background Check. If the Criminal History Background Check reveals a criminal conviction, a review of the application by the Board of Nursing is required.

A urine drug screening test is performed on all students upon initial acceptance into the professional phase of the program. If the test is positive for illegal substances, admission into the professional phase of the program is denied. In addition, illegal use of prescribed substances will result in denial of admission into the professional phase of the program.

Occupational Therapy Assistant

Associate in Science Degree

This program's mission is to prepare Occupational Therapy Assistants to be professionals who contribute to the health and well-being of individuals. Disease, injury, depression, stroke, advanced age and other challenges prevent people from participating independently in activities of daily living. An Occupational Therapy Assistant makes it possible for these people to achieve independence and improve their quality of life. This degree prepares students for employment in healthcare, educational and other community settings

Graduates of an accredited OTA program are eligible to sit for a national certification exam and once certified, the graduate can obtain state licensure to practice as a Certified Occupational Therapy Assistant (COTA) in New Jersey.

This is a joint A.S. degree program in Occupational Therapy Assistant with the County College of Morris (CCM) and the University of Medicine and Dentistry of New Jersey (UMDNJ). The curriculum includes 32 General Education credits completed at CCM with the remaining 42 credits of professional/clinical coursework taken at UMDNJ.

General Education Requirements (32 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3

Continued on next page

Math-Science-Technology (11 CR)		
Anatomy & Physiology I	BIO 101	4
Anatomy & Physiology II	BIO 102	4
Statistics or College Algebra	MAT 124 or 110	3
Social Science (3 CR)		
General Psychology	PSY 113	3
Humanities (3 CR)		
Ethics	PHL 114	3
Social Science or Humanities (3 CR)		
Developmental Psychology	PSY 219	3
General Education Electives (6 CR)		
Principles of Sociology	SOC 120	3
Diversity Elective		3
Total General Education Credits		**32**

Occupational Therapy Core (42 CR) 42
The professional phase consists of 42 credits to be completed at UMDNJ.

Total Program Credits **74**

Personal Trainer

Certificate of Achievement

This program provides entry-level training to those interested in a career as a personal trainer in the fitness industry. Students gain background information about fitness and health sufficient to take one of several Personal Trainer certification examinations offered by various national organizations such as the American Council on Exercise, the American College of Sports Medicine and the Aerobic Fitness Association of America. The curriculum follows the American College of Sports Medicine guidelines.

Foundations of Personal Training	HES 104	3
Personal and Family Nutrition	HED 115	3
Weight Training	HES 127	1
Personal Fitness	HES 126	1
Program Design & Implementation	HES 107	3
First Aid & Emergency Care	HED 295	3
Cardiopulmonary Resuscitation	HED 283	1
Personal Trainer Field Experience	HES 106	1
Total Certificate Credits		**16**

The Personal Trainer Certificate of Achievement is awarded to students who achieve grades of C or better in all courses in the program.

Photography Technology

Associate in Applied Science Degree

The Photography Technology program provides graduates with entry-level employment skills in the rapidly changing professional photography field. Following a foundation year of basic photography, digital photography and general education, art and business courses, the second year includes specialized courses in lighting, large-format and color. Students select elective courses to design programs that will prepare them for their individual career goals in the field of photography. The emphasis is on hands-on experience to develop both the creative ability and the technical skills essential to photography careers.

General Education Foundation (25/26 CR)		
Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (7/8 CR)		
Choose from General Education course list		
Mathematics		3
Laboratory Science		4
Technology		0-1
Social Science or Humanities (3 CR)		
Choose from General Education course list		3
General Education Electives (9 CR)		
History of Photography	PHO 113	3
General Education Electives		6
Total General Education Credits		**25/26**
Photography Tech. Core (39 CR)		
Photography I	PHO 115	3
Photography II	PHO 116	3
Equipment, Materials & Processes	PHO 112	3
Contemporary Photography	PHO 119	3
Digital Imaging I	PHO 204	3
Color Photography I	PHO 117	3
Studio Lighting	PHO 216	3
Digital Imaging II	PHO 223	3
Portfolio Preparation	PHO 226	3
Professional Studio	PHO 227	3
Photography Elective		3
Two-Dimensional Design	ART 130	3
Drawing I	ART 122	3
Total Core Credits		**39**
Total Program Credits		**64/65**

Public Administration

Associate in Science Degree

This curriculum is designed for students interested in careers in public service at the federal, state, county and municipal levels or in nonprofit and private organizations involved in public service. It is also an appropriate prelaw program. This transfer program is appropriate for a student seeking a bachelor's degree in public administration or political science. In today's complex society, preparation, training and qualification for selection and progression in a career in public service requires that the individual be knowledgeable in the social sciences and humanities, as well as trained in the specialized skills of the profession.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

General Education Foundation (31/32 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (10/11 CR)		
Computer Software Application	CMP 203	3
or		
Introduction to Data Processing	CMP 110	
Mathematics Elective		3/4
Laboratory Science Elective		4
Social Science (3 CR)		
Principles of Sociology	SOC 120	3
Humanities (3 CR)		
History of American Women	HIS 209	3
or		
History of the African-American Exp	HIS 204	
or		
Twentieth Century American History, US II	HIS 167	
Social Science/Humanities (3 CR)		
Comparative Government	POL 245	3
General Education (6 CR)		
Choose from General Education course list		3
Speech Fundamentals	ENG 109	3
Total General Education Credits		**31/32**

Public Administration Core (30 CR)

American Government	POL 111	3
State and Local Government	POL 231	3
Public Administration	PUB 111	3
Constitutional Law	POL 222	3
General Psychology	PSY 113	3
or		
Field Experience Public Admin	PUB 250	
History of Minorities in U.S.	HIS 203	3
or		
History of American City and Suburb	HIS 247	
Elements of Accounting	ACC 110	3
or		
Principles of Accounting I	ACC 111	
Principles of Economics I	ECO 211	3
Principles of Economics II	ECO 212	3
Business Law	BUS 213	3
Total Core Credits		**30**

Total Program Credits **61/62**

Radiography

Associate in Applied Science Degree

The Radiography program is a day program; there are no evening Radiography courses offered. A new Radiography class is selected for each Fall Semester.

The Associate in Applied Science in Radiography is designed to provide students with the knowledge and skills to enter the field of radiography. The curriculum includes a general education foundation and 45 credits in courses pertinent to the development of competency in diagnostic radiography.

The Radiography program seeks to provide each student with the didactic, laboratory and clinical education to become a qualified entry-level radiologic technologist. The program provides each student the opportunity to develop technical skills, enhance critical thinking and strengthen interpersonal behavior through educational activities.

Interested applicants should obtain a Radiography Program Brochure from the Office of Admissions or the Department of Allied Health. Applicants must also complete the application process in the Office of Admissions. Students seeking admission into the Radiography program must have a GPA of 2.5 or better and a grade of C or better in all courses. An Allied Health Professional Phase Appication Form must be filed in the Office of Records and Registration by March 1 for the Fall Semester.

Students need to be aware that due to the competitive nature of admission into the Radiography Program granting a seat into the professional radiography courses is based on completion of all of the general education courses taken, the grades received and the overall grade point average. D grades are not accepted for any course in the Radiography program. Placement basis or MAT 011, MAT 014, MAT 016 and ENG 025 or ENG 022 or ENG 007, and all ESL classes are developmental prerequisite courses for the program. Students are not permitted to register for BIO 101 Anatomy and Physiology I and BIO 102 Anatomy and Physiology II until all developmental courses are successfully completed.

All students accepted into the professional (radiography courses) phase of the program are subject to an annual federal and state

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criminal history background check and urine drug screening. A statewide criminal record search through the New Jersey State Police and a National Criminal History Database Search is performed on all students upon initial acceptance into the professional phase of the program and annually thereafter. If a record is found as a result of the criminal record searches, admission into the professional phase of the program is denied. If there is no record upon admission but subsequent searches result in a record found, the student will be immediately dismissed from the program.

The Radiography program maintains a zero-tolerance policy regarding substance abuse. The program faculty requires Radiography students to provide safe, effective and supportive care in the clinical setting. To fulfill this purpose, Radiography students must be free of chemical impairment during participation in any part of the radiography program including classroom, laboratory and clinical settings. A urine drug screening test is performed on all students performing their clinical education at any of the program's clinical affiliates upon initial acceptance into the professional phase of the program. Failure to submit to the urine drug screening will result in dismissal from the program. If the test is positive for illegal substances, admission into the professional phase of the program is denied. In addition, illegal use of prescribed substances will result in denial of admission into the professional phase of the program.

Students must obtain malpractice insurance at their own expense, obtain health clearance, an annual flu vaccine and be certified in CPR by the American Heart Association. In addition, students in the professional phase of the program are required to carry personal health insurance that provides coverage for accidents and sickness. Group health insurance is available through the college or students may purchase individual policies from their own carriers. All Radiography students are required to wear the County College of Morris radiography uniform when in the clinical setting. Uniforms are obtained at the student's expense.

Graduates of the two-year program are eligible to apply for New Jersey State licensure and for certification as a Registered Technologist by the American Registry of Radiologic Technologists.

A detailed description of the program's policies and procedures can be found in the Radiography Program Student Handbook available in the program's office in the Department of Allied Health and in the Admissions office. The program's pregnancy policy can be found in the Radiography Program Student Handbook.

Due to continual program revisions mandated by the accrediting agencies, students should consult their academic advisors when selecting courses.

The program is accredited by the State of New Jersey Department of Environmental Protection, Bureau of Radiologic Technology Board, P.O. Box 420, Trenton, NJ 08625, 609-984-5890 and the Joint Review Committee on Education in Radiologic Technology, JRCERT, 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-3182, 312-704-5300.

General Education Foundation (20 CR)		
Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3 CR)		
Microcomputer Software Application	CMP 203	3
Social Science or Humanities (3 CR)		
General Psychology	PSY 113	3
General Education Electives (8 CR)		
Anatomy & Physiology I	BIO 101	4
Anatomy & Physiology II	BIO 102	4
Total General Education Credits		**20**
Radiography Core (48 CR)		
Speech Fundamentals	ENG 109	3
Introduction to Radiography	RAD 100	2
Principles of Radiography I	RAD 104	4
Radiography Clinical Practice I	RAD 107	1
Math for Radiographers	MAT 140	1
Radiation Biology and Physics	RAD 110	3
Principles of Radiography II	RAD 114	4
Radiography Clinical Practice II	RAD 117	2
Intermediate Clinical Practice	RAD 120	3
Pathology for Radiography	RAD 200	2
Principles of Radiography III	RAD 204	4
Radiologic Special Imaging	RAD 207	3
Radiographic Exposure	RAD 210	3
Radiography Clinical Practice III	RAD 213	2
Principles of Radiography IV	RAD 220	4
Advanced Imaging	RAD 224	2
Radiography Clinical Practice IV	RAD 227	2
Advanced Clinical Practice	RAD 230	3
Total Core Credits		**48**
Total Program Credits		**68**

Science courses completed by students prior to entering a Radiography course must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

Respiratory Therapy

Associate in Applied Science Degree

The general objective of the Respiratory Therapy program is to prepare graduates with the knowledge, skills, professional attitudes and behaviors necessary to attain state licensing and national credentialing for a career in respiratory therapy. Graduates become a vital part of the healthcare team in a variety of settings including hospitals, long-term care facilities, home health agencies, pulmonary rehabilitation centers and physician offices.

The program has two components: a pre-professional phase that includes all the general education and science prerequisites, and a professional phase that includes respiratory therapy specific course work and clinical education. Courses in the pre-professional phase of the program may be taken on a full-time or part-time basis during day or evening hours. Full-time day attendance is preferred for the professional phase of the program. Part-time attendance must be approved by the program director. Students seeking admission into the Respiratory Therapy program must have a GPA of 2.5 or better and a grade of C or better in all their pre-professional phase courses. Additionally, students must attend a program general orientation and complete an essay. Interested students should schedule an interview with the program director. An Allied Health Professional Phase Application Form must be filed in the office of Records and Registration by March 1 for admission into the professional phase in the Fall Semester.

A statewide criminal record search through the New Jersey State Police and a National Criminal History Database Search is performed on all students upon initial acceptance into the professional phase of the program and annually thereafter. If a record is found as a result of the criminal record searches, admission into the professional phase of the program is denied. If there is no record upon admission but subsequent searches result in a record found, the student will be immediately dismissed from the program.

When a graduate applies for licensure as a respiratory care practitioner in New Jersey, the New Jersey Board of Respiratory Care requires a Criminal History Background Check. If the Criminal History Background Check reveals a criminal conviction, a review of the application by the Board of Respiratory Care is required.

Students accepted into the program are responsible for obtaining malpractice insurance and must have health clearance through the college's Health Services. Certification in Basic Life Support (BLS) for Healthcare Providers by the American Heart Association is also required.

The Respiratory Therapy program maintains a zero-tolerance policy regarding substance abuse. Respiratory therapy students must be free of chemical impairment during participation in all parts of the respiratory therapy program including classroom, laboratory and clinical settings. A urine drug screening test is performed on all students upon initial acceptance into the professional phase of the program. If the test is positive for illegal substances, admission into the professional phase of the program is denied. In addition, illegal use of prescribed substances will result in denial of admission into the professional phase of the program.

General Education Foundation (20 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3 CR)		
College Algebra	MAT 110	3
Social Science or Humanities (3 CR)		
General Psychology	PSY 113	3
General Education Electives (8 CR)		
Anatomy and Physiology I	BIO 101	4
Anatomy and Physiology II	BIO 102	4
Total General Education Credits		**20**

Respiratory Therapy Core (47 CR)

Introduction to Chemistry Lecture	CHM 117	3
Introduction to Chemistry-Lab	CHM 118	1
Microbiology	BIO 215	4
Concept of Physics	PHY 103	4
Humanities Elective		3
Respiratory Therapeutics	RTH 199	5
Cardiopulmonary Pharmacology	RTH 202	2
Cardiopulmonary Physiology	RTH 203	2
Cardiopulmonary Evaluation	RTH 204	3
Cardiopulmonary Pathophysiology	RTH 205	2
Mechanical Ventilation	RTH 206	4
Neonatal & Pediatric Respiratory Care	RTH 207	2
Clinical Practice I	RTH 210	3
Clinical Practice II	RTH 211	3
Clinical Practice III	RTH 212	4
Advanced Respiratory Care	RTH 208	2
Total Core Credits		**47**

Total Program Credits **67**

Due to continual program revisions mandated by the accrediting agencies and/or changes in state mandated requirements, students should consult their academic advisors when selecting courses.

Science courses completed by students prior to entering a Respiratory Therapy course must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

The program is accredited through the Committee on Accreditation for Respiratory Care (COARC) www.CoARC.com. Graduates are eligible to apply for New Jersey State licensure and advanced credentialing as a Registered Respiratory Therapist (National Board for Respiratory Care) www.NBRC.org.

Science and Mathematics

Associate in Science Degree

These curricula emphasize the physical and biological sciences and mathematics, as well as the liberal arts. They are designed for transfer to baccalaureate programs in mathematics and the sciences and are appropriate for students who plan careers in mathematics, biology, chemistry, physics, teaching, medicine, dentistry, allied health and other scientific programs. All programs include general education courses and advanced mathematics and science courses appropriate to the transfer major.

Options within the Science and Mathematics program include: Biology, Chemistry and Mathematics. Students should consult an academic advisor to select the curriculum which is appropriate for their transfer and career goals, as well as preparation for medical, dental and chiropractic schools. Transfer to science majors in four-year curricula which are more specialized, such as pharmacy and astronomy, can be accomplished with these programs with careful advisement.

County College of Morris (CCM) is a member of the New Jersey Sea Grant Consortium, a private, nonprofit organization comprised of member colleges, universities and private groups interested in marine affairs. Students may enroll in a variety of summer courses, including BIO 260 and 262, leading to a concentration in Marine Science or Environmental Science. These may be used as electives in the following Science and Mathematics options and in the Environmental Science Option with the permission of your academic advisor. Courses are offered at the New Jersey Sea Grant Laboratory at Sandy Hook during the summer. Other courses include field trips or the use of equipment and facilities of the consortium.

Students may consult the Biology and Chemistry chair for specific information and assignment to an academic advisor for options in Mathematics/Chemistry and Biology. Students interested in the Mathematics options may consult the Mathematics chair.

Due to continual program revisions mandated by the accrediting agencies and/or changes in state-mandated requirements, students should consult their academic advisors when selecting courses.

Pre-Medical, Pre-Dental, Pre-Veterinary majors

Students preparing for medical, dental or veterinary medical schools should select the Chemistry major or the Biology major, pre-professional track. These schools require General Biology I and II, General Chemistry I and II, Organic Chemistry I and II, General Physics I and II, and mathematics, generally through Calculus I or further, to support these. Since there are prerequisites for these courses, it is important to see an academic advisor early in the process to plan the entire sequence of courses. Chiropractic, occupational therapy, physical therapy and physical assistant programs should major in Biology and confer with an academic advisor to select the correct track and selection of courses.

Students with a previous non-science degree who plan to take only the science courses necessary for these schools should also see an advisor since proper sequencing can save time in the completion of the courses. Additionally, by transferring general education courses from the previous degree, a student can complete an A.S. degree in Chemistry or Biology without taking any additional courses. For further information, contact the Department of Biology and Chemistry.

Pharmacy

Pharmacy programs are often separate schools within a university. The appropriate major to prepare for pharmacy is Chemistry with appropriately selected courses. Students should consult with an academic advisor to select the correct sequencing of courses.

Marine Biology

CCM is a member of the New Jersey Sea Grant Consortium, a private, nonprofit organization comprised of member colleges, universities and private groups interested in marine affairs. Students may enroll in a variety of summer courses, including BIO 260 and 262, leading to a concentration in Marine Science or Environmental Science. These may be used as electives in the following Science and Mathematics options, and in the Environmental Science with the permission of an academic advisor. Courses are offered at the New Jersey Sea Grant Laboratory at Sandy Hook during the summer. Other courses include field trips or the use of equipment and facilities of the consortium. Students may consult with the Biology and Chemistry chair for specific information and assignment to an academic advisor for options in Mathematics/Science, Chemistry and Biology. Students interested in the Mathematics options may consult the Mathematics chair.

Biology

An Option within Science and Mathematics

Note: Biology majors requiring remediation in algebra must complete MAT 016 Intermediate Algebra prior to taking courses in Biology and Chemistry.

Biology is one of the most rapidly developing sciences today. A tremendous rate of expansion in the understanding of life processes, along with unprecedented growth in the medical and environmental technologies, has resulted in a growing need for trained professionals in new, as well as traditional, fields. This curriculum, with each of its four tracks, reflects this expanding science and its related technologies. It is a liberal arts program with emphasis on the sciences and mathematics. Students planning to transfer to baccalaureate programs or professional schools take courses that either parallel those required in the first two years of most baccalaureate programs in biology or those required for entry into the most popular professional programs.

Because of the complexity of career options and the diversity in requirements of baccalaureate and professional schools, students are strongly advised to work closely with their academic advisors. Students who are preparing for medical, dental or veterinary medical schools should see an academic advisor in the Department of Biology immediately to plan their courses and sequencing of courses. The appropriate major is either Biology, pre-professional track, or Chemistry. Students who have a previous non-science degree should be able to complete either of these degrees by transferring general education courses and taking only the sciences required for the medical schools. College programs may differ widely in course offerings for various biology majors. In order to achieve maximum transfer of credits, it is absolutely essential that students speak to their academic advisors and consult the transfer institution regarding specific curriculum requirements.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

Students considering a career in teaching should read about the County College of Morris Teacher Education Specialization in Biology.

The following are tracks within the major for purposes of advisement. Dissection is required in certain mandated courses.

• Traditional

Track 1 is the traditional curriculum which, because of its general scope, is anticipated to continue to satisfy the needs of the majority of students. Students in this program can continue in virtually any direction, although in certain circumstances they may have to make up credits upon transferring.

Traditional - Track 1

General Education Foundation (32 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (11 CR)		
Precalculus	MAT 123	4
Biology Elective		4
Math-Science-Technology Elective		3
Social Science (3 CR)		
Choose from General Education course list		3
Humanities (3 CR)		
Choose from General Education course list		3
Social Science or Humanities (3 CR)		
Choose from General Education course list		3
General Education Electives (6 CR)		
Choose from General Education course list		6
Total General Education Credits		**32**

Biology Traditional Core (32/33 CR)

General Biology I	BIO 121	4
General Biology II	BIO 122	4
General Chemistry I Lecture	CHM 125	3
General Chemistry I Lab	CHM 126	1
General Chemistry II Lecture	CHM 127	3
General Chemistry II Lab	CHM 127	1
Biology Elective		4
Statistics	MAT 124	3
or		
Analytic Geometry & Calculus I	MAT 131	
Free Electives		9
Total Core Credits		**32/33**
Total Program Credits		**64/65**

Students should consult their academic advisors when selecting free electives.

Science courses completed by students prior to entering the Biology option must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

• Health Care

Track 2 is intended for those students who are preparing to transfer directly to professional schools including occupational therapy and physician's assistant programs. However, this program is not suitable for students wishing to apply to programs in medicine, dentistry, optometry or podiatry, which require a more traditional selection of courses. This track has a more narrow selection of courses than Tracks 1 and 3, and, thus, may restrict transfer options. It is essential that applicants to this program be accepted only with the approval of their faculty advisors.

Health Care - Track 2

General Education Foundation (32 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (11 CR)		
Precalculus	MAT 123	4
Biology Elective		4
Math-Science-Technology Elective		3
Social Science (3 CR)		
Choose from General Education course list		3
Humanities (3 CR)		
Choose from General Education course list		3
Social Science or Humanities (3 CR)		
Choose from General Education course list		3
General Education Electives (6 CR)		
Choose from General Education course list		6
Total General Education Credits		**32**

Biology Health Care Core (31/32CR)

General Biology I	BIO 121	4
General Biology II	BIO 122	4
General Chemistry I Lecture	CHM 125	3
General Chemistry I Lab	CHM 126	1
General Chemistry II Lecture	CHM 127	3
General Chemistry II Lab	CHM 128	1
Anatomy & Physiology I	BIO 101	4
Anatomy & Physiology II	BIO 102	4
Statistics	MAT 124	3
or		

Continued on next page

Analytic Geometry & Calculus I	MAT 131	
Biology Elective		4
Total Core Credits		**31/32**
Total Program Credits		**63/64**

Students should consult their academic advisors when selecting the Biology elective.

Science courses completed by students prior to entering the Biology option must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

• Preprofessional/Scientific

Track 3 is intended to meet the needs of those whose math and science skills are above average and who hope to transfer to the more competitive baccalaureate programs, professional schools or medical, veterinary or dental schools. Students wishing to be admitted into this track can do so only with the approval of their faculty advisors.

Preprofessional/Scientific - Track 3

General Education Foundation (32 CR)		
Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (11 CR)		
Precalculus	MAT 123	4
Biology Elective		4
Math-Science-Technology Elective		3
Social Science (3 CR)		
Choose from General Education course list		3
Humanities (3 CR)		
Choose from General Education course list		3
Social Science or Humanities (3 CR)		
General Psychology	PSY 113	3
General Education Electives (6 CR)		
Choose from General Education course list		6
Total General Education Credits		**32**
Biology Pre-Professional Core (32 CR)		
General Biology I	BIO 121	4
General Biology II	BIO 122	4
General Chemistry I Lecture	CHM 125	3
General Chemistry I Lab	CHM 126	1
General Chemistry II Lecture	CHM 127	3
General Chemistry II Lab	CHM 128	1
Organic Chemistry I Lecture	CHM 231	3
Organic Chemistry I Lab	CHM 231	1
Organic Chemistry II Lecture	CHM 233	3
Organic Chemistry II Lab	CHM 234	1
Analytic Geometry & Calculus I	MAT 131	4
Free Elective		4
Total Core Credits		**32**
Total Program Credits		**64**

Students should consult their academic advisors when selecting free electives.

Science courses completed by students prior to entering the Biology option must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

• Environmental

Track 4 is designed to meet the needs of those who clearly are interested in a career in the environmental field. These programs are becoming increasingly more specialized in the array of courses required in the first two years. For this reason, students wishing to be admitted into this track will require the approval of their faculty advisors.

Environmental - Track 4

General Education Foundation (32 CR)		
Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (11 CR)		
Precalculus	MAT 123	4
Biology Elective		4
Math-Science-Technology Elective		3
Social Science (3 CR)		
Choose from General Education course list		3
Humanities (3 CR)		
Choose from General Education course list		3
Social Science or Humanities (3 CR)		
General Psychology	PSY 113	3
General Education Electives (6 CR)		
Choose from General Education course list		6
Total General Education Credits		**32**
Environmental Science Core (32 CR)		
General Biology I	BIO 121	4
General Biology II	BIO 122	4
Ecology (Fall)	BIO 202	4
General Chemistry I Lecture	CHM 125	3
General Chemistry I Lab	CHM 126	1
General Chemistry II Lecture	CHM 127	3
General Chemistry II Lab	CHM 128	1
Statistics	MAT 124	3
Free Elective		9
Total Core Credits		**32**
Total Program Credits		**64**

Students should consult their academic advisors when selecting free electives.

Science courses completed by students prior to entering the Biology option must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

Chemistry

An Option within Science and Mathematics

Note: Chemistry majors requiring remediation in algebra must complete MAT 016 Intermediate Algebra prior to taking courses in Biology and Chemistry.

Chemistry is a versatile subject area and the pursuit of a career in chemistry can be a most intellectually satisfying experience. No other basic science touches and shapes as many aspects of modern society as chemistry. From soft contact lenses and synthetic blood to alternative fuel sources and advances in medicine and biotechnology, the study of chemistry has provided the solution to complex problems and has improved the quality of all phases of human life.

The fact that chemists at all levels of education find a market for their skills and knowledge in every employment area is further demonstration of the scope of the science of chemistry. Chemists provide the backbone for manufacturing industries, such as pharmaceuticals, laboratories, environmental protection and for government positions in regulatory agencies.

Chemistry and biochemistry are the strongest preparation for professional schools in the health-related disciplines, such as medicine, dentistry and pharmacy, as well as the fields of environmental science, polymers and geology.

The Chemistry program at County College of Morris is designed to provide students with a strong foundation in all areas of modern chemistry. The core courses required for the A.S. degree prepare the student to transfer and attain a B.S. or B.A. degree, to attend health-related professional schools in medicine, dentistry, pharmacy, physical therapy and chiropractic, or to start a career in chemistry. The degree is also applicable for those students interested in the applications of chemistry to environmental problems. Students who are preparing for medical, dental or veterinary schools should see an academic advisor in the Department of Biology and Chemistry early in the process to plan their courses and sequencing of courses. Students who have a previous non-science degree should be able to complete this program by transferring general education courses and taking only the sciences required for medical schools.

The department is staffed with a dedicated teaching faculty, and many have industrial or medical experience. State-of-the-art equipment is used in all laboratory courses to maximize the student's practical hands-on experience.

Students should consult their advisors to ensure the proper sequencing of required and elective courses. Correct advisement is absolutely necessary to assure transferability.

The study of chemistry opens doors to satisfying careers and to a professional life in which the tendency to ask "why" can lead to rewarding endeavors.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

Students considering a career in teaching should read about the County College of Morris Teacher Education Specialization in Chemistry.

General Education Foundation (32 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (11 CR)		
Precalculus	MAT 126	4
Biology or Physics Elective		4
Math/Science/Technology Elective		3
Social Science (3 CR)		
Choose from General Education course list		3
Humanities (3 CR)		
Choose from General Education course list		3
Social Science or Humanities (3 CR)		
Choose from General Education course list		3
General Education Electives (6 CR)		
Choose from General Education course list		6
Total General Education Credits		**32**

Chemistry Core (32 CR)

General Chemistry I Lecture	CHM 125	3
General Chemistry I Lab	CHM 126	1
General Chemistry II Lecture	CHM 127	3
General Chemistry II Lab	CHM 128	1
Organic Chemistry I Lecture	CHM 231	3
Organic Chemistry I Lab	CHM 232	1
Organic Chemistry II Lecture	CHM 233	3
Organic Chemistry II Lab	CHM 234	1
Biology or Physics Elective		4
Analytic Geometry & Calculus I	MAT 131	4
Restricted Elective		4
Free Elective		4
Total Core Credits		**32**

Total Program Credits 64

Students should consult their academic advisors when selecting free and restricted electives.

Science courses completed by students prior to entering the Chemistry option must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

Mathematics

An Option within Science and Mathematics

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

Students considering a career in teaching should read about the County College of Morris Teacher Education Specialization in Mathematics.

General Education Foundation (32 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (11 CR)		
Restricted Laboratory Science		4
Technology Elective		3
Restricted Laboratory Science		4
Social Science (3 CR)		
Choose from General Education course list		3
Humanities (3 CR)		
Choose from General Education course list		3
Social Science or Humanities (3 CR)		
Choose from General Education course list		3
General Education Electives (6 CR)		
Choose from General Education course list		6
Total General Education Credits		**32**

Mathematics Core (28/30 CR)

Precalculus	MAT 123	4
Analytic Geometry & Calculus I	MAT 131	4
Analytic Geometry & Calculus II	MAT 132	4
Calculus III	MAT 230	4
or		
Analytic Geometry & Calculus I	MAT 131	4
Analytic Geometry & Calculus II	MAT 132	4
Calculus III	MAT 230	4
Differential Equations	MAT 232	3
Free Electives		10
Math Elective		3/4
or		
Computer Programming for Engineers	ENR 125	3
Total Core Credits		**28/30**
Total Program Credits		**60/62**

Teacher Education

County College of Morris (CCM) offers 10 Teacher Education specializations designed to meet the requirements of the first two years of a baccalaureate-level teacher education program in elementary or secondary education (K-12). The teacher education programs at the four-year colleges and universities require that students pursue a major in an academic discipline in addition to professional education courses that are required for teacher certification. Students planning to pursue a teaching degree at a four-year college or university should enroll in one of the following CCM programs that will provide the foundation teacher education courses, as well as courses in the student's intended major at the four-year college: Biology, Chemistry, English, History, Mathematics, Physical Education, Psychology, Sociology, Spanish, Visual Arts.

Students in the Teacher Education Specializations are advised by faculty advisors from the area of specialization.

CCM's Teacher Education program follows the curricular model of teacher education typical at many four-year colleges. However, both general and professional education requirements often differ from college to college. Therefore, the student is strongly encouraged to review the education program requirements with the four-year college BEFORE selecting courses at CCM.

Students may visit CCM's Transfer Office for assistance.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

Biology Education Specialization

Associate in Science Degree

Note: Biology education majors requiring remediation in algebra must complete MAT 016 Intermediate Algebra prior to taking courses in Biology and Chemistry.

This program is designed for transfer to a four-year program leading to certification for teaching, which requires an academic major (Biology) and professional education courses. Students are advised by both the teacher education unit and by a faculty advisor from the Biology and Chemistry department.

General Education Foundation (33 CR)		
Communication (9 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3
Math-Science-Technology (9 CR)		
Pre-Calculus	MAT 123	4
Analytical Geometry & Calculus I	MAT 131	4
Computer Information Literacy	CMP 101	1
Social Science (3 CR)		
General Psychology	PSY 113	3
Humanities (3 CR)		
Choose from General Education course list		3
Social Science or Humanities (3 CR)		
Choose from General Education course list		3
General Education Electives (6 CR)		
Literature Survey or Language Sequence		6
Total General Education Electives		**33**
Biology Education Core (32 CR)		
General Chemistry I Lecture	CHM 125	3
General Chemistry II Lab	CHM 126	1
General Chemistry II Lecture	CHM 127	3
General Chemistry II Lab	CHM 128	1
General Biology I	BIO 121	4
General Biology II	BIO 122	4
Genetics (Spring Only)	BIO 201	4
or		
Ecology (Fall Only)	BIO 202	
Teacher Education Core (12 CR)		
Personal Health and Wellness	HED 286	3
Teaching in America	EDU 111	3
Behavior Observation Education	EDU 211	3
Education Psychology	PSY 217	3
Total Core Credits		**32**
Total Program Credits		**65**

Chemistry Education Specialization

Associate in Science Degree

Note: Chemistry education majors requiring remediation in algebra must complete MAT 016 Intermediate Algebra prior to taking courses in Biology and Chemistry.

This program is designed for transfer to a four-year program leading to certification for teaching, which requires an academic major (Chemistry) and professional education courses. Students are advised by both the teacher education unit and by a faculty advisor from the Biology and Chemistry department.

General Education Foundation (33 CR)		
Communication (9 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3
Math-Science-Technology (9 CR)		
Pre-Calculus	MAT 123	4
Biology or Physics Elective		4
Computer Information Literacy	CMP 101	1
Social Science (3 CR)		
General Psychology	PSY 113	3
Humanities (3 CR)		
History Elective		3
Social Science or Humanities (3 CR)		
Choose from General Education course list		3
General Education Electives (6 CR)		
Literature Survey or Language Sequence		6
Total General Education Credits		**33**
Chemistry Education Core (32 CR)		
General Chemistry I Lecture	CHM 125	3
General Chemistry I Lab	CHM 126	1
General Chemistry II Lecture	CHM 127	3
General Chemistry II Lab	CHM 128	1
Organic Chemistry I Lecture	CHM 231	3
Organic Chemistry II Lab	CHM 232	1
Organic Chemistry II Lecture	CHM 233	3
Organic Chemistry II Lab	CHM 234	1
Analytical Geometry & Calculus I	MAT 131	4
Teacher Education Core (12 CR)		
Personal Health & Wellness	HED 286	3
Education Psychology	PSY 217	3
Teaching in America	EDU 111	3
Behavior Observation in Education	EDU 211	3
Total Core Credits		**32**
Total Program Credits		**65**

Science courses completed by students prior to entering the Chemistry option must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake courses.

English Education Specialization

Associate in Arts Degree

This program is designed for transfer to a four-year program leading to certification for teaching, which requires an academic major (English) and professional education courses. Students will be advised by the chair or the assistant chair of the English and Philosophy department.

General Education Foundation (45 CR)

Communication (9 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3
Math-Science-Technology (12 CR)		
Choose from General Education course list		
Mathematics		3-8
Laboratory Science		4-8
Technology		0-4
Social Science (6 CR)		
General Psychology	PSY 113	3
Principles of Sociology	SOC 120	3
Humanities (9 CR)		
American Literature Col.- Civil War	ENG 249	3
American Literature Civil War - 20th C	ENG 250	3
Humanities Elective		3
Choose from General Education course list		
History (6 CR)		
Choose from General Education course list		6
Diversity (3 CR)		
World Literature: Beginnings to 1650	ENG 243	3
or		
World Literature: 1650 to Present	ENG 244	
Total General Education Credits		**45**

Teacher Education Core (12 CR)

Teaching in America	EDU 111	3
Behavior and Observation in Education	EDU 211	3
Educational Psychology	PSY 217	3
Personal Health and Wellness	HED 286	3

English Core (6 CR)

English Classics	ENG 246	3
Major British Writers– 19th & 20th C	ENG 247	3
Total Core Credits		**18**
Total Program Credits		**63**

Exercise Science Health/Physical Education Specialization

Associate in Science Degree

This program is designed for transfer to a four-year program leading to careers in Physical Therapy, Occupational Therapy, Kinesiology, Athletic Training, Physical Education, Exercise Physiology, Cardiac Rehabilitation and Personal Training.

General Education Foundation (33 CR)

Communication (9 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3
Math-Science-Technology (10 CR)		
Mathematics Restricted Elective		3
Introduction to Data Processing	CMP 110	3
or		
Computer Software Applications	CMP 203	
Science Restricted Elective		4
Social Science (3 CR)		
General Psychology	PSY 113	3
Humanities (3 CR)		
Choose from General Education course list		3
General Education Electives (8 CR)		
Anatomy & Physiology I	BIO 101	4
Anatomy & Physiology II	BIO 102	4
Total General Education Credits		**33**

Teacher Ed Phy. Ed. Core (33 CR)

Introduction to Exercise Science	HES 111	3
Personal & Family Nutrition	HED 115	3
Personal Health & Wellness	HED 286	3
Kinesiology	HES 211	3
First Aid & Emergency Care	HED 295	3
Cardio Pulmonary Resuscitation	HED 283	1
Exercise Physiology	HES 212	3
Exercise Measurement & Prescription	HES 213	3
Educational Psychology	PSY 217	3
Teaching in America	EDU 111	3
Behavior Observation in Education	EDU 211	3
Exercise Science Restricted Electives		2
Total Core Credits		**33**
Total Program Credits		**66**

Mathematics Education Specialization

Associate in Science Degree

This program is designed for transfer to a four-year program leading to certification for teaching, which requires an academic major (Mathematics) and professional education courses. Students are advised by a faculty advisor from the Mathematics department.

General Education Foundation (32 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (11 CR)		
Restricted Laboratory Science		8
Technology		3
Social Science (3 CR)		
General Psychology	PSY 113	3
Humanities (3 CR)		
Choose from General Education course list		3
Social Science or Humanities (3 CR)		
Choose from General Education course list		3
General Education Electives (6 CR)		
Speech Fundamentals	ENG 109	3
Elective		3
Total General Education Credits		**32**

Mathematics Core (30/31 CR)

Precalculus	MAT 123	4
Analytic Geometry & Calculus I	MAT 131	4
Analytic Geometry & Calculus II	MAT 132	4
Calculus III	MAT 230	4
or		
Analytic Geometry & Calculus I	MAT 131	4
Analytic Geometry & Calculus II	MAT 132	4
Calculus III	MAT 230	4
Differential Equations	MAT 232	3

Teacher Education Core (15 CR)

Teaching in America	EDU 111	3
Behavior Observation in Education	EDU 211	3
Linear Algebra	MAT 228	3
Personal Health & Wellness	HED 286	3
Educational Psychology	PSY 217	3
Total Core Credits		**30/31**

Total Program Credits **62/63**

Social Studies (History) Education Specialization

Humanities/Social Science Associate in Arts Degree

This program is designed for transfer to a four-year program leading to certification for teaching, which requires an academic major (History) and professional education courses. Students are advised by a faculty advisor from the History and Political Science department.

General Education Foundation (45 CR)

Communication (9 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3
Math-Science-Technology(12 CR)		
Choose from General Education course list		
Mathematics		3-8
Laboratory Science		4-8
Technology		0-4
Social Science (6 CR)		
General Psychology	PSY 113	3
Principles of Sociology	SOC 120	3
Humanities (9 CR)		
Choose from General Education course list, Literature Survey or Language Sequence		9
Humanities Elective		
History (6 CR)		
Emergence of America – U.S. History I	HIS 166	3
and		
20th Century – U.S. History II	HIS 167	3
or		
Early Modern Europe	HIS 113	3
and		
Modern Europe	HIS 114	3
Diversity (3 CR)		
Choose from General Education course list		3
Total General Education Credits		**45**

Teacher Education Core (12 CR)

Teaching in America	EDU 111	3
Behavior and Observation in Education	EDU 211	3
Educational Psychology	PSY 217	3
Personal Health and Wellness	HED 286	3

History Core & Free Elective (6 CR)

History of African American Experience	HIS 204	3
or		
History of American Women	HIS 209	
Free Elective	3	
Total Core Credits		**18**

Total Program Credits **63**

Social Studies (Psychology) Education Specialization

Humanities/Social Science
Associate in Arts Degree

This program is designed for transfer to a four-year program leading to certification for teaching, which requires an academic major (Psychology) and professional education courses. Students are advised by a faculty advisor from the Psychology and Education department.

General Education Foundation (45 CR)		
Communication (9 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3
Math-Science-Technology (12 CR)		
Choose from General Education Course List		
Mathematics		3-8
Laboratory Science		4-8
Technology		0-4
Social Science (6 CR)		
General Psychology	PSY 113	3
Principles of Sociology	SOC 120	3
Humanities (9 CR)		
Literature Survey or Language Sequence		9
Humanities Elective		
Choose from General Education course list		
History (6 CR)		
Choose from General Education course list		6
Diversity(3 CR)		
Choose from General Education course list		3
Total General Education Credits		**45**
Teacher Education Core (12 CR)		
Teaching in America	EDU 111	3
Behavior Observation in Education	EDU 211	3
Educational Psychology	PSY 217	3
Personal Health and Wellness	HED 286	3
Psychology Core/Free Electives	6	
Total Core Credits		**12**
Total Program Credits		**63**

Social Studies (Sociology) Education Specialization

Humanities/Social Science
Associate in Arts Degree

This program is designed for transfer to a four-year program leading to certification for teaching, which requires an academic major (Sociology) and professional education courses. Students are advised by a faculty advisor from the Sociology, Economics and Anthropology department.

General Education Foundation (45 CR)		
Communication (9 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3
Math-Science-Technology (12 CR)		
Choose from General Education course list		
Mathematics		3-8
Laboratory Science		4-8
Technology		0-4
Social Science (6 CR)		
General Psychology	PSY 113	3
Principles of Sociology	SOC 120	3
Humanities (9 CR)		
Literature Survey or Language Sequence		9
Humanities Elective		
Choose from General Education course list		
History (6 CR)		
Choose from General Education course list		6
Diversity (3 CR)		
Choose from General Education course list		3
Total General Education Credits		**45**
Teacher Education Core (12 CR)		
Teaching in America	EDU 111	3
Behavior Observation in Education	EDU 211	3
Educational Psychology	PSY 217	3
Personal Health and Wellness	HED 286	3
Sociology Specialization Core (6 CR)		
Contemporary Social Issues	SOC 202	3
Any Other Sociology Course		3
Total Core Credits		**18**
Total Program Credits		**63**

Spanish Education Specialization

Humanities/Social Science
Associate in Arts Degree

This program is designed for transfer to a four-year program leading to certification for teaching, which requires an academic major (Spanish) and professional education courses. Students are advised by a faculty advisor from the Languages and ESL department.

General Education Foundation (45 CR)

Communication (9 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3
Math-Science-Technology (12 CR)		
Choose from General Education Course List		
Mathematics		3-8
Laboratory Science		4-8
Technology		0-3
Social Science (6 CR)		
General Psychology	PSY 113	3
Principles of Sociology	SOC 120	3
Humanities (9 CR)		
Advanced Spanish Conversation	SPN 218	3
Advanced Spanish Composition	SPN 219	3
Humanities Elective		3
Choose from the General Education course list		
History (6 CR)		
Choose from the General Education course list		6
Diversity (3 CR)		**3**
Choose from the General Education course list		
Total General Education Credits		**45**

Teacher Education Core (12 CR)

Teaching in America	EDU 111	3
Behavior and Observation in Education	EDU 211	3
Educational Psychology	PSY 217	3
Personal Health and Wellness	HED 286	3

Education Specialization Core (6 CR)

Choose courses from Specialization Core List		
Spanish Literature	SPN 220	3
Survey of Latin-American Literature	SPN 223	3
Total Core Credits		**18**
Total Program Credits		**63**

Visual Arts Education Specialization

Associate in Fine Arts Degree

This program is designed for transfer to a four-year program leading to certification for teaching and requires an academic major (Art) and professional education courses. Students are advised by a faculty advisor from the Visual Arts department.

General Education Foundation (25/26 CR)

Communication (9 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Speech Fundamentals	ENG 109	3
Math-Science-Technology (7/8 CR)		
Choose from General Education course list		
Mathematics Elective		3
Laboratory Science Elective		4
Technology		0-1
Social Science (3 CR)		
General Psychology	PSY 113	3
General Education Courses (6 CR)		
Art History I	ART 133	3
Art History II	ART 134	3

Teacher Education Core (12 CR)

Teaching in America	EDU 111	3
Behavior Observation in Education	EDU 211	3
Educational Psychology	PSY 217	3
Personal Health and Wellness	HED 286	3
Total General Education Credits		**25/26**

Visual Arts Core (27 CR)

Drawing I—AFA	ART 122	3
Drawing II—AFA	ART 123	3
Figure Drawing—AFA	ART 124	3
Two-Dimensional Design—AFA	ART 130	3
Color Theory—AFA	ART 131	3
Three-Dimensional Design—AFA	ART 132	3
Painting I	ART 219	3
Sculpture I	ART 228	3
or		
Ceramic I	ART 241	
Portfolio and Presentation	ART 230	3
Total Core Credits		**27**
Total Program		**Credits 64/65**

Technical Studies

Associate in Applied Science Degree

The focus of this program is to provide a vehicle for alternately trained professionals to attain their educational goals by awarding credit for those training, internship, apprenticeship and other educational experiences that can be adequately evaluated and measured.

General Education Foundation (24 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3 CR)		
College Algebra	MAT 110	3
or		
Statistics	MAT 124	
Social Science (3 CR)		
Principles of Sociology	SOC 120	3
General Education Electives (9 CR)		
Humanities Electives		6
Science Elective		3
General Education Elective (3 CR)		
General Psychology	PSY 113	3
Total General Education Credits		**24**

Technical Studies Core (40 CR)

Select from one of the following concentrations **

- Computer Information Systems
- Digital Media Technology
- Telecommunications
- Electronic Technology
- Mechanical Technology
- Electro/Mechanical Technology
- Fire Science Technology

Total Core Credits	**40**
Total Program Credits	**64**

Three to 25 Technical Studies elective credits may be earned for corporate, industrial or military training programs after review by faculty assessor of related program.

***Individuals must select at least four courses in one of the concentrations listed below to satisfy the Technical Studies credit requirements.*

Select from one of the following concentrations.

Computer Information Systems
(CMP 120, 123, 124, 125, 128, 129, 200, 203, 205, 207, 208, 209, 220, 237, 239, 240, 243)

Digital Media Technology
(MED 110, 113, 114, 119, 210, 213, 220, 240, CMP 108, 126, 239, 244, 245)

Telecommunications
(TEL 109, 110, 120, 220, 226, 233, 234, ELT 110, 209, ENR 119, 120)

Electronic Technology
(ELT 110, 115, 201, 213, 215, 231, ENR 119, ENR 120, 124, TEL 110)

Mechanical Technology
(ENR 117, 118, 124, MAT 113, MEC 104, MEC 117, 118, 141, 155, 236)

Electro/Mechanical Technology
(ELT 110, 201, 210, ENR 117, 119, ENR 124, MEC 110, 141, 155, 236, TEL 110)

Age-of-Credit Policy: Technology-based courses taken by a student at least seven years prior to the time the student applies for graduation may not be applied to a degree or certificate within the Department of Information Technologies.

Telecommunications Systems Technology

Associate in Applied Science Degree

The Telecommunications Systems Technology program is an interdisciplinary AAS degree designed to prepare students to enter the high-technology marketplace in telecommunications and management of networking systems. The field of telecommunications is undergoing tremendous change, spurred by the growth of sophisticated hardware, software and networking components such as VOIP (Voice over IP), wireless and optical technology. The challenge of integrating sophisticated technology into products, systems and services means that technical professionals must develop a solid foundation and experience in these areas. The County College of Morris (CCM) program prepares students for a telecommunications career starting with entry-level positions such as planning and monitoring network layouts and installations, analyzing and operating networks, and planning and operating telecommunications systems. Students have the option of participating in a cooperative work experience during their program.

Articulation Agreements

Established agreements provide students with the option of transferring to New Jersey Institute of Technology, DeVry University, SUNY Institute of Technology or Rochester Institute of Technology. Students should check with the Transfer Office about the latest articulation agreements with this program.

General Education Foundation (21 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3 CR)		
Statistics	MAT 124	3
Social Science (3 CR)		
Principles of Economics I	ECO 211	3
General Education (9 CR)		
College Algebra	MAT 110	3
Computer Science I	CMP 128	3
Computer Software Applications	CMP 203	3
Total General Education Credits		**21**

Telecommunications Core (39/41 CR)

Principles of Marketing I	MKT 113	3
Introduction to Telecommunications	TEL 109	3
Advanced Digital & Microprocessors	ELT 209	4
or		
Computer Assembly Language	CMP 230	3
Technical Elective		3
Digital Principles	ELT 110	3
Data Communications	TEL 232	3
Routing I	TEL 110	3
Telecommunications Systems	TEL 234	3
Operating Systems Elective		3
Technical Elective		3/4
Business or Computer Elective		3
Programming Language Elective		3
Computer Operating Systems & Utilities	CMP 200	3
Total Core Credits		**39/41**
Total Program Credits		**60/62**

Networking

An Option within Telecommunications Systems Technology

The fast growth of the Internet and computer connectivity has created significant new opportunities. In recent years, the microcomputer network has become a critical component of the corporate computing environment. With such a rapid expansion of local area networks in offices and homes, there has been an increase in the demand for professionals who possess a broad understanding of local-area and wide-area technologies, such as VOIP (Voice over IP), wireless and optical technologies. Students gain the ability to integrate them into a seamless network. The Networking option of the Telecommunications Systems Technology program is designed to focus on market demands for entry-level network specialists in Local Area Networks, Wide Area Networks, wireless networks and especially in the area of network administration and routing.

Articulation Agreements

Established agreements provided students with the option of transferring to New Jersey Institute of Technology, DeVry University, SUNY Institute of Technology or Rochester Institute of Technology. Students should check with the Transfer Office about the latest articulation agreements with this program.

General Education Foundation (21 CR)

Communication (6 CR)		
English Composition I	ENG 111	3
English Composition II	ENG 112	3
Math-Science-Technology (3 CR)		
Statistics	MAT 124	3
Social Science (3 CR)		
Principles of Economics I	ECO 211	3
General Education (9 CR)		
College Algebra	MAT 110	3
Computer Science I	CMP 128	3
Computer Software Applications	CMP 203	3
Total General Education Credits		**21**

Networking Core (40/41 CR)

Principles of Marketing I	MKT 113	3
Introduction to Telecommunications	TEL 109	3
Advanced Digital Microprocessors		
or	ELT 209	4
Computer Assembly Language	CMP 230	3
Digital Principles	ELT 110	3
Data Communications	TEL 232	3
Telecommunications Systems	TEL 234	3
Routing I	TEL 110	3
Routing II	TEL 120	3
Routing III	TEL 220	4
Network Operating Systems	TEL 233	3
Computer Operating Systems & Utilities	CMP 200	3
Programming Language Elective		3
Network Security	CMP 124	3
Total Core Credits		**40/41**
Total Program Credits		**61/62**

Telecommunications Systems Technology Certificates

Certificates of Achievement

The Telecommunications Systems Technology Certificates of Achievement are designed for present or future professionals who seek to improve their technical knowledge and skills in certain areas. Each certificate is balanced with theory and hands-on experience.

The certificates are designed primarily for students who are presently working or plan to work in one of the following areas. It is possible to complete any certificate within one semester. The certificates also serve as an introduction to the field and can transfer completely to the Telecommunications Systems Technology degree programs. Some courses in the various certificates also prepare students to take outside certification examinations such as CCNA, Microsoft and CompTIA's Net+.

Basic Telecommunications Fundamentals

A Certificate of Achievement within Telecommunications Systems Technology

Digital Principles	ELT 110	3
Technical Computer Applications	ENR 119	1
Introduction to Telecommunications	TEL 109	3
Total Certificate Credits		**7**

Routing (Cisco CCNA)

A Certificate of Achievement within Telecommunications Systems Technology

THE ROUTING CERTIFICATE FOLLOWS THE FOUR SEMESTER CISCO CCNA CURRICULUM.

Routing I	TEL 110	3
Routing II	TEL 120	3
Routing III/IV	TEL 220	4
Total Certificate Credits		**10**

Systems Networking

A Certificate of Achievement within Telecommunications Systems Technology

Routing I	TEL 110	3
Routing II	TEL 120	3
Network Operating Systems	TEL 233	3
Microcomputer Operating Systems and Utilities	CMP 200	3
Total Certificate Credits		**12**