

# MIDDLESEX

COUNTY COLLEGE



**1997-1999  
CATALOG SUPPLEMENT**

# Introduction

This supplement is an update to the 1997-99 catalog and should be used in conjunction with it. It contains updated information on the academic programs, calendar, tuition and fees and policies for the 1998-99 academic year. However, program requirements, courses, policies, tuition, fees and procedures are subject to change as circumstances and exigencies require. Additional information may be obtained from the appropriate office or the Registrar.

## **ACCESSIBILITY FOR PERSONS WITH DISABILITIES**

Middlesex County College provides reasonable accommodation for qualified individuals with disabilities. Students requesting information regarding procedures should contact the Counselor for Students with Disabilities at (732) 906-2546.

## **ACCREDITATION**

Middlesex County College is accredited by the Middle States Association of Colleges and Secondary Schools. Inquiries may be sent to:

Commission on Higher Education  
Middle States Association of Colleges and Schools  
3624 Market Street  
Philadelphia, PA 19104  
(215) 662-5606

# 1998-99 Academic Calendar

## FALL 1998

<b>August</b>	<b>31</b>	Faculty orientation & meetings
<b>September</b>	<b>1</b>	Faculty development; mandatory day for faculty
	<b>2 &amp; 3</b>	Change of program
	<b>7</b>	Labor Day - holiday observed
	<b>8</b>	Fall semester classes begin
<b>October</b>	<b>12</b>	Columbus Day - holiday observed
<b>November</b>	<b>11</b>	Veterans' Day - holiday observed
	<b>26, 27, 28 &amp; 29</b>	Thanksgiving - holiday observed
<b>December</b>	<b>18</b>	Last Day of Fall Semester Classes
	<b>19, 21 &amp; 22</b>	Specially scheduled final exams
	<b>23</b>	Winter recess begins
	<b>28</b>	Wintersession 1999 begins
	<b>31</b>	Fall semester grades available

## SPRING 1999

<b>January</b>	<b>18</b>	Martin Luther King Day - holiday observed
	<b>19</b>	Faculty orientation & meetings; first day of faculty obligation, spring semester
	<b>20 &amp; 21</b>	Change of program
	<b>25</b>	Spring semester classes begin
<b>February</b>	<b>15</b>	Presidents' Day - holiday observed
	<b>22</b>	Concentrated Spring II session begins
<b>March</b>	<b>20</b>	Spring recess begins — no classes
	<b>27</b>	Weekend classes resume and will meet on March 27 & 28
	<b>29</b>	Weekday and evening classes resume
<b>April</b>	<b>2 &amp; 3</b>	Holiday observed — no classes
<b>May</b>	<b>11</b>	Last day of spring classes
	<b>12 &amp; 13</b>	Reading days
	<b>14, 17 &amp; 18</b>	Specially scheduled final exams
	<b>19</b>	Last day of faculty obligation
	<b>24</b>	Spring semester grades available
	<b>26</b>	Graduation

# General Information

## APPEALS

### Academic Appeals

You may file a written appeal for an exception to an academic policy. You must be able to demonstrate that there are circumstances that warrant an exception. You should submit academic appeals to the academic dean of the division that administers your degree or certificate program. Your academic dean may meet with you to discuss your appeal. The decision of the dean is final. Appeal forms are available in your dean's office and in the Office of the Registrar.

You should direct questions about a course grade to the course instructor or to the academic department chairperson of the course. All approved grade changes must be submitted to the Office of the Registrar within one year of the original grade assignment.

### Financial Appeals

You may file a written appeal for an exception to tuition and fee refund policies. The Tuition appeals Committee will consider appeals in the case of serious illness or death of a family member, and requires that proper supporting documentation be submitted with the appeal. You should submit financial appeals to the Office of the Registrar for review by the committee. Appeal forms are available in the Office of the Registrar. You must submit financial appeals within 30 days of the last day of the semester related to the appeal.

# Academic Standards and Regulations

## ADVANCED STANDING

### Certified Professional Secretary Certificate

The College grants up to 28 credits for achievement of the Certified Professional Secretary Certificate. The Certificate is awarded by The Institute for Certifying Secretaries, G10 Crown Center, 2440 Pershing Road, Kansas City, MO 64108.

The following is a list of courses for which you will be awarded transfer credit:

BUS 101	Business Organization & Management	3 credits
BUS 107	Computer Applications for Business	3 credits
BUS 115	Mathematics of Finance	3 credits
BUS 201	Business Law I	3 credits
ECO 201	Principles of Economics I	3 credits
OAD 101	Document Processing I	2 credits
OAD 102	Document Processing II	2 credits
OAD 208	Office Admin Cooperative Work Experience	3 credits
OAD 211	Contemporary Office Procedures	3 credits
OAD 213	Administrative Office Management	3 credits

## ACADEMIC STATUSES

### Academic Probation and Restriction

A student on Academic Probation or Restriction who has voluntarily not enrolled for the next semester will be placed on Academic Probation for the next semester in which she/he enrolls, with the permission of the Dean of his/her division, or of the Department Chairperson or the Academic Advising Center.

## GRADUATION

### May Commencement Ceremony

Graduates who have satisfied all degree requirements at the end of a spring semester and all graduates from the previous January and August semesters, may participate in the May commencement ceremony. Candidates must submit an application for May graduation by March 1. Additionally, candidates for degrees in Automotive Technology, the Culinary Arts Option in Hotel, Restaurant and Institutional Management, Radiography Education, Respiratory Care and candidates for the certificate in Culinary Arts who will complete all degree or certificate requirements at the end of August may participate in the ceremony. To be eligible, candidates must submit an application for August graduation by March 1.

### Honors at Graduation

Graduates who have earned honors at graduation will be given a gold tassel to wear with their cap and gown. Eligible August candidates who subsequently earn honors after having completed all degree/certificate requirements will be given a gold tassel when they receive their diplomas/certificates in September.

Degrees are conferred in absentia when candidates have received permission in advance from their academic dean to be excused from the May commencement ceremony.

# Division of Business, Computer Science and Engineering Technologies

Dr. Robert M. Fishco, Dean

## NEW PROGRAMS

### ACCOUNTING

The Accounting Technical Certificate is designed for individuals with a college degree who have satisfied basic skills, general education and mathematics requirements.

#### Technical Certificate Program

##### Major Requirements

Course		Credits	Prerequisites
ACC 101	Financial Accounting	4	
ACC 102	Managerial Accounting	4	ACC 101
ACC 202	Cost Accounting	4	ACC 102
ACC 211	Intermediate Accounting I	4	ACC 102
<i>Recommended Elective:</i>			
ACC 212	Intermediate Accounting II	4	ACC 211
		<b>Total Credits</b>	<b>20</b>

### LEGAL ASSISTANT

#### Accounting and Legal Studies Department

The Legal Assistant Technical Certificate is designed for individuals with a college degree who have satisfied basic skills, general education and mathematics requirements.

#### Technical Certificate Program

##### Major Requirements

Course		Credits	Prerequisites
LET 100	Introduction to Legal Assisting	2	
LET 101	Legal Research	3	ENG 121; LET 100
LET 110	Litigation Procedure	4	LET 101
LET 111	Contracts & the Uniform Commercial Code	3	LET 101
LET 113	Legal Writing	2	LET 101
LET 280	Senior Seminar for Legal Assistants	3	LET 104, 108, 110, 112
<i>Choose one of the following recommended electives:</i>			
LET 104	Property Transactions	3	LET 101
LET 105	Family Law	3	LET 101
LET 106	Wills and Estate Administration	3	LET 101
LET 107	Law Office Management	3	LET 107
LET 108	Torts	3	LET 101
LET 109	Criminal Law and Procedure	3	LET 101
LET 112	Business Organizations & Govt Regulations	3	LET 111
LET 114	Computer Applications for the Law Office	2	LET 101; BUS 107
		<b>Total Credits</b>	<b>19-20</b>

# SMALL BUSINESS MANAGEMENT/ENTREPRENEURIAL STUDIES

## Business Administration and Management Department

**Why major in Small Business Management/Entrepreneurial Studies?** Small Business Management/Entrepreneurial Studies is for people who intend to start, or who already operate a small business. If you have a skill, an idea, a thing you have always liked to do-and you want to be your own boss - this program can help you realize your goal of running a successful business.

**If I major in Small Business Management/Entrepreneurial Studies, what degree can I earn?** You have several choices with this major. You can earn an **Associate in Applied Science** degree, a **Certificate of Achievement** or a **Technical Certificate**. The degree program incorporates general education courses with the small business management curriculum. The Certificate of Achievement is designed for those with no prior college course work and includes English composition with the small business management curriculum. The Technical Certificate program is geared toward people who already hold a college degree and intend to operate a small business.

**If I major in Small Business Management/Entrepreneurial Studies, can I transfer to a four year college or university?** Many colleges and universities will apply the courses you have taken towards a bachelor's degree. You should meet with an academic advisor for appropriate planning.

**What will I learn if I study Small Business Management/Entrepreneurial Studies?** You will study the elements that are necessary for a thriving business; business plan, capital needs, marketing strategies, legal and tax issues, forms of ownership, employee management, new technologies, sales, marketing and new product development. You will acquire skills particular to entrepreneurs but transferable to the general business environment.

**Are there any requirements I must satisfy before I start taking courses in my major?** You must demonstrate proficiency in keyboarding or typewriting by either completing OAD 010, Keyboarding for Computers or by appropriate waiver of the Office Administration Department Chairperson. Algebra I is a prerequisite for all majors. You may satisfy this requirement with a grade of C or better in high school Algebra I. Algebra I competency must be verified with a passing score on the College placement test.

**How long will it take for me to complete this degree?** If you do not need developmental coursework, and you register for an average of 16 credits each semester, you can complete the degree in two years. If you do not need developmental coursework, and you register for an average of 15 credits each semester, you can complete the certificate in one year. You can shorten the amount of time by taking courses in the summer and winter sessions. **Some major courses in the Small Business Management program may only be offered in the evenings.**

*Check course descriptions for complete list of prerequisites and corequisites.*

### Degree Program

*Pending approval by the State of New Jersey*

#### Major Requirements

Course		Credits	Prerequisites
BUS 101	Business Organization and Management	3	
BUS 107	Intro To Business Data Processing <sup>1</sup>	3	
BUS 115	Mathematics of Finance	3	
BUS 201	Business Law I	3	

<sup>1</sup>You must take OAD 010 at the same time you take BUS 107 or obtain an approved waiver demonstrating proficiency in keyboarding.

*(Continued on page 8)*

Course		Credits	Prerequisites
SBM 110	Accounting for Small Business	4	
SBM 120	Small Business Management	3	
SBM 130	Marketing & Sales for Small Business	3	
SBM 210	Advertising & Promotion for Small Business	3	
SBM 220	Leadership & Supervision	3	
SBM 230	Risk & Financial Management	3	
SBM 240	Cooperative Ed/Internship in Small Business	3	
SBM 250	Seminar in Entrepreneurial Studies	3	BUS 101; SBM 110, 120, 130, 210 or permission of department chairperson
BUS	Business Elective <sup>2</sup>	3	

### Graduation Requirements

Course		Credits	Prerequisites
ENG 121	English Composition I	3	
ENG 122	English Composition II	3	ENG 121
	Physical/Health Education	1-3	
	Science Requirement <sup>3</sup>	3	
	Humanities Elective	3	
	Social Science Elective	6	
	General Education Elective	3	

**Total Credits 62-64**

### Certificate of Achievement

#### Major Requirements

Course		Credits	Prerequisites
BUS 101	Business Organization and Management	3	
BUS 107	Intro To Business Data Processing <sup>4</sup>	3	
SBM 110	Accounting for Small Business	4	
SBM 120	Small Business Management	3	
SBM 130	Marketing & Sales for Small Business	3	
SBM 210	Advertising & Promotion for Small Business	3	
SBM 230	Risk & Financial Management	3	
SBM 250	Seminar in Entrepreneurial Studies	3	BUS 101; SBM 110, 120, 130, 210 or permission of department chairperson
ENG 121	English Composition I	3	
ENG 122	English Composition II	3	ENG 121

**Total Credits 31**

<sup>2</sup>You may choose from MGT 208, MKT 201, and RET 204.

<sup>3</sup>You may choose a science course for which you have the appropriate academic background from Biology, Chemistry, Environmental Science or Science.

<sup>4</sup>You must take OAD 010 at the same time you take BUS 107 or obtain an approved waiver demonstrating proficiency in keyboarding.



## Technical Certificate

### Major Requirements

Course		Credits	Prerequisites
BUS 101	Business Organization and Management	3	
SBM 110	Accounting for Small Business	4	
SBM 120	Small Business Management	3	
SBM 130	Marketing & Sales for Small Business	3	BUS 101; SBM 110, 120, 130, 210 or permission of department chairperson
SBM 250	Seminar in Entrepreneurial Studies	3	
<i>Choose from one of the following:</i>			
SBM 210	Advertising & Promotion for Small Business	3	
SBM 230	Risk & Financial Management	3	
		<b>Total Credits</b>	<b>19</b>

## CHANGES OR CORRECTIONS TO EXISTING PROGRAMS

### CIVIL/CONSTRUCTION ENGINEERING TECHNOLOGY Land Surveying Degree Option, p.37

Three credits of Social Science Electives are required instead of 6.

### COMPUTER AIDED DRAFTING Certificate Program, p.38

MCT 101 Introduction to Technology (2 credits) replaces MEC 107 as a required course.

### LEGAL ASSISTANT Degree and Certificate Programs, pp.65 & 66

LET 113 and LET 114 are 2 credit courses not 3 credit.

The total credits for the degree program are 66-70 and the total credits for the certificate program are 28-34.

### MECHANICAL/MANUFACTURING ENGINEERING TECHNOLOGY Degree Program, p.84

MCT 101 Introduction to Technology (2 credits) replaces MEC 107 as a required course.

The total number of credits required for the degree are 67-69.

# MECOMTRONICS ENGINEERING TECHNOLOGY, p.85

## Major Requirements

Course		Credits	Prerequisites
MCT 101	Introduction to Technology	2	
MCT 102	Support & Maint of Computer Systems	2	MCT 101 & 103
MCT 103	Foundations of Mecomtronics	4	
MCT 104	Electrical & Mechanical Power Systems	4	MCT 101 & 103
MCT 106	Automated Systems	4	MCT 101 & 103
MCT 201	Telecommunications with Indus Applications	3	MCT 102, 104 & 106
MCT 202	Special Topics in Engineering Technology	3	MCT 201, 203 & 205
MCT 203	Control & Automation of Manfg Systems	3	MCT 104 & 106
MCT 205	Manufacturing Processes & Quality Mgt	4	MCT 106
MCT 206	Capstone Project	3	MCT 201, 203 & 205
	Technical Elective	3	MCT 201 & 203

Choose one of the following courses:

CSC 125	Web Page Design & Development
CSC 133	Intro to Computer Science Using C++
CSC 230	Multimedia Production & Authoring Tools
ELT 224	Communication Electronics
ELT 230	Industrial Electronics
ELT 234	Audio Technology
ELT 238	Advanced Digital Electronics
MCT 208	Mecomtronics & Telemedia Tech Field Exp
MEC 219	Dynamics of Machine Elements

## Graduation Requirements

Course		Credits	Prerequisites
ENG 131	Research, Composition and Presentation I	2	
ENG 132	Research, Composition and Presentation II	2	ENG 131
ENG 133	Research, Composition and Presentation III	2	ENG 132
MAT 145	Integrated Mathematics I	2	
MAT 146	Integrated Mathematics II	2	MAT 145
MAT 245	Integrated Mathematics III	2	MAT 146
MAT 246	Integrated Mathematics IV	2	MAT 245
PHY 145	Mecomtronics Physics I	2	
PHY 146	Mecomtronics Physics II	2	PHY 145; MCT 102, 104, 106, & ENG 132
PHY 245	Mecomtronics Physics III	2	PHY 146; MCT 201, 203, 205 & ENG 133
PHY 246	Mecomtronics Physics IV	2	PHY 245
	Humanities Elective	3	
	Physical/Health Education Elective	1-3	
	Social Science Elective	3	

**Total Credits 64-66**

# SCIENCE TRANSFER

## Computer Science Option, p.95

### Major Requirements

Course		Credits	Prerequisites
CSC 133	Introduction to Computer Science Using C++	4	
CSC 134	Object Oriented Programming Using C++	4	CSC 133
CSC 233	Computer Architecture & Assembly Lang I	4	CSC 134
CSC 235	Data Structures	4	CSC 134; MAT 131
<i>Take 16 credits from one of the following sequences:</i>			
MAT 129	Precalculus	4	
MAT 131	Analytic Geometry and Calculus I	4	MAT 129
MAT 132	Analytic Geometry and Calculus II	4	MAT 131
MAT 206	Discrete Mathematics	4	MAT 132
or			
MAT 131	Analytic Geometry and Calculus I	4	
MAT 132	Analytic Geometry and Calculus II	4	MAT 129
MAT 206	Discrete Mathematics	4	MAT 132
	Any 200 level mathematics course	4	
	Computer Science/Math/Science Electives <sup>5</sup>	6-8	

### Graduation Requirements

Course		Credits	Prerequisites
ENG 121	English Composition I	3	
ENG 122	English Composition II	3	ENG 121
	Science Electives <sup>6</sup>	8	
	Humanities Electives	6	
	Physical/Health Education Elective	1-3	
	Social Science Electives	6	
<b>Total Credits</b>		<b>65-69</b>	

<sup>5</sup>You should consult with an academic advisor before choosing courses to satisfy this requirement. Your choices should be compatible with the requirements of the upper division college or university you plan to attend.

<sup>6</sup>Choose from BIO 117-118, 123-124; CHM 117-118, 123-124; ENV 211-212; PHY 121-122, 131-132 or 231.

# TELEMEDIA COMMUNICATIONS TECHNOLOGY, p.99

## Major Requirements

Course		Credits	Prerequisites
MAD 121	Graphics for Computer Authors & Presenters	3	MCT 101
MCT 101	Introduction to Technology	2	
TCT 103	Product Maintenance I	4	
TCT 104	Product Maintenance II	4	TCT 103
TCT 122	Multimedia Presentations	3	MAD 121
TCT 201	PC and LAN Hardware	4	TCT 104
TCT 202	Remote Access & Data Acquisition	4	TCT 201
TCT 221	Wide-Area Networking I	4	TCT 104 & 122
TCT 222	Wide-Area Networking II	4	TCT 221
	Technical Elective	3	

Choose from one of the following:

CSC 125	Web Page Design & Development
CSC 133	Intro to Computer Science Using C++
CSC 160	Introduction to Unix
CSC 165	Beginning C Programming
BUS 101	Business Organization & Management
BUS 201	Business Law I
MCT 208	Mecomtronics & Telemedia Tech Field Experience

## Graduation Requirements

Course		Credits	Prerequisites
ENG 131	Research, Composition & Presentation I	2	
ENG 132	Research, Composition & Presentation II	2	ENG 131
ENG 133	Research, Composition & Presentation III	2	ENG 132
MAT 141	Mathematics for Telecommunications I	2	
MAT 142	Mathematics for Telecommunications II	2	MAT 141
MAT 241	Mathematics for Telecommunications III	2	MAT 142
MAT 242	Mathematics for Telecommunications III	2	MAT 241
PHY 141	Foundations of Physics I	2	
PHY 142	Foundations of Physics II	2	PHY 141
PHY 241	Foundations of Physics III	2	PHY 142
PHY 242	Foundations of Physics IV	2	PHY 241
	Humanities Elective	3	
	Physical/Health Education Elective	1-3	
	Social Science Elective	3	

**Total Credits 64-66**

# Division of Science, Mathematics and Health Technologies

Dr. Marilyn Keener, Dean

## CHANGES OR CORRECTIONS TO EXISTING PROGRAMS

### RESPIRATORY CARE - JOINT UMDNJ/MCC PROGRAM

#### Major Requirements

Course		Credits	Prerequisites
RST 100	Core Concepts in Respiratory Care	1	
RST 101	Fund of Respiratory Care	4	
RST 102	Clinical Practice I	1	
RST 103	Applied Cardiopulm Pathology I	2	
RST 201	Patient Mgt/Critical Care	3	RST 105 & 107
RST 203	Applied Cardiopulm Pathology II	2	RST 103
RST 207	Cardiopulmonary Pharmacology	2	RST 104
RST 208	Principles of Ventilatory Support	4	RST 101
RST 209	Clinical Practice II	2	RST 101 & 102
RST 210	Cardiopulmonary Evaluation	2	
RST 211	Pediatric/Neonatal Respiratory Care	2	
RST 212	Long Term/Home/Rehabilitative Care	2	
RST 215	Clinical Practice III	3	RST 105 & 106

#### Graduation Requirements

Course		Credits	Prerequisites
BIO 111	Human Anatomy & Physiology I	4	
BIO 112	Human Anatomy & Physiology II	4	BIO 111
BIO 211	Principles of Microbiology	4	
CHM 119	General Organic & Biochemistry I	4	
CSC 107	Computers in Health Technologies	1	
ENG 121	English Composition I	3	
ENG 122	English Composition II	3	ENG 121
MAT 107	Math I	3	
PSY 123	Introductory Psychology	3	
	Physical/Health Ed Elective	1-3	
	Humanities Electives	6	
	Social Science Elective	6	
<b>Total Credits</b>		<b>72-74</b>	

DHY 208 Pharmacology is a 2 credit course not 3 credits

### MEDICAL LABORATORY TECHNOLOGY, p.86

BIO 211 Microbiology is a required course for the major, not BIO 221.

### PHARMACY ASSISTANT, p.90

NRS 103 Medication Administration is no longer required to satisfy the certificate requirements.

# Division of Social Sciences and Humanities

Dr. Bernadette Mendonez-Russell, Dean

## CHANGES OR CORRECTIONS TO EXISTING PROGRAMS

### CRIMINAL ADMINISTRATION DEGREE Police Science Option, p.43

#### Core Requirements

Course		Credits	Prerequisites
ENG 121	English Composition I	3	
ENG 122	English Composition II	3	ENG 121
	Humanities Electives	6	
	Physical/Health Ed Elective	1-3	
	Social Science Electives	6	
	Mathematics/Science Electives	6-8	
<i>Laboratory Science. Choose eight (8) credits from the following sequences:</i>			
BIO 117	Biology I	4	
BIO 118	Biology II	4	BIO 117
	or		
BIO 123	General Biology I	4	
BIO 124	General Biology II	4	BIO 123
	or		
	One year laboratory science sequence in chemistry or physics.		
	or		
<i>Choose two of the following courses:</i>			
BIO 105	Heredity, Evolution & Society	4	
BIO 106	Human Bio & Bio-Medical Issues	4	
ENV 211	Environmental Science I	4	
ENV 212	Environmental Science II	4	
SCI 155	Intro to Geology & Oceanography	4	
SCI 156	Intro to Astronomy	4	

### LIBERAL ARTS English Option, p. 69

The statement, "In addition, related courses must be completed sequentially" is incorrect. The only courses which must be taken sequentially are those which have a prerequisite.

## Theatre Option, p.72

### Major Requirements

Course		Credits	Prerequisites
THE 145	Stagecraft	3	
THE 146	Play Production	3	
<i>Choose two courses from the following:</i>			
THE 105	Intro to Theatre	3	
THE 123	Theatre History	3	
THE 124	Contemporary Theatre	3	
THE 131	Acting I	3	
THE 132	Acting II	3	THE 131
THE 152	American Musical Theatre	3	
SPE 124	Oral Interpretation of Literature	3	
DAN 131	Elements of Dance	3	
DAN 132	Dance Appreciation	3	
DAN 201	Methods of Modern Techniques in Dance	3	
DAN 202	Improvisation & Composition	3	
		<b>Total Credits</b>	<b>64-68</b>

# Course Descriptions

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## ACCOUNTING

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### **Change in prerequisites**

ACC 208

ACCOUNTING FIELD EXPERIENCE

3 credits (1-12)

*Prerequisites:* ACC 102 and written permission of the Department Chair of Cooperative Education and Internships.

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## ART

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### **Change in title and course description**

ART 223

GE HUM

SCULPTURE IN RELIEF

3 credits (3-0)

Explores the language and materials of sculpture in relief. Develops skills and understanding of the basic elements of sculptural form through the modeling, carving and casting in relief. Examines the work of sculptors through slides, films, books and field trips. A materials fee is assessed to cover the cost of materials required for the course.

### **Change in title and course description**

ART 224

GE HUM

SCULPTURE IN THE ROUND

3 credits (3-0)

*Prerequisite:* None

Explores the language and materials of sculpture. Develops skill and understanding of the basic elements of sculptural form through guided projects using the traditional tools and techniques for sculpture in the round. Examines previous and contemporary sculptors and styles through slides, films, books and field trips. A materials fee is assessed to cover the cost of materials required for the course.

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## BIOLOGY

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BIO 228

GENETICS

4 credits (3-3)

*Prerequisite:* BIO 124 or departmental approval; CHM 124 or departmental approval

Mendelian and molecular concepts of heredity and their relationship to cell function, development and evolution. Topics include structure, function of genes, patterns of inheritance, nature and causes of mutations, mechanisms of gene regulation and population genetics. Lab includes genetics of fruit flies, fungi, bacteria, human pedigree analysis and modern molecular techniques.

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## BUSINESS

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### **Change in title**

BUS 107

COMPUTER APPLICATIONS FOR BUSINESS

3 credits (3-0)

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## CIVIL/CONSTRUCTION ENGINEERING TECHNOLOGY

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### **Change in prerequisites**

CIT 105

STATICS FOR TECHNICIANS

3 credits (3-0)

*Prerequisites:* CIT 110 or MCT 101; MAT 109

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## COMMUNICATION

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### **Change in prerequisite**

COM 208

COMMUNICATION SEMINAR AND FIELD EXPERIENCE

3 credits (1-12)

*Prerequisite:* Permission of department chair

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## COMPUTER SCIENCE

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### **Change in description and contact hours**

CSC 226

NETWARE 3 TO 4 UPDATE

3 credits (2-2)

Provides a 3.1x System Administrator with an overview of the NetWare 4 NDS (NetWare Directory Services) environment. Topics include contrasting the differences between the two systems and the integration of NetWare 3 and NDS. Covers the Novell course #526 InternetWare 3 to InternetWare 4.11 Update. Upon successful completion of the course, the student will be prepared to take the associated Novell Certification test which is required for CNE (Certified Novell Engineer) certification.

### **Change in credit and contact hours**

CSC 230

MULTIMEDIA PRODUCTION AND AUTHORING TOOLS

4 credits (3-2)

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## COUNSELING AND PLACEMENT SERVICES

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CPS 041

STRATEGIES FOR SUCCESS

3 credit equivalent (3-0)

*Prerequisite:* CPS 031 or departmental approval

Second course in a two-semester sequence for students in Project Connections. Provides an opportunity for students to learn strategies for academic success and to plan for successful transitions in career and education. Focuses on a better understanding of LD issues and self-advocacy, to become familiar with the Adaptive Lab Equipment, to set career and educational goals and design strategies to accomplish them.



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## ENGLISH

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### ENG 110 INTRODUCTION TO RESEARCH WRITING 3 credits (3-0)

*Prerequisites:* Appropriate scores on the reading and writing portions of the College Placement Test or a grade of C or better in RDG 009 and ENG 009.

*Corequisites:* RDG 011 and ENG 010. Completing RDG 011 and ENG 010 with grades of C or better or passing the reading and writing portions of the College Placement Test waives the corequisite.

An introduction to the basic strategies of library research and formal research writing. Through a variety of research projects and writing assignments across the curriculum requiring use of source materials, students will write between 5,000 and 7,000 words and learn both MLA and APA formats. (Does not fulfill the requirement for freshman composition — ENG 121 and ENG 122/125, and cannot be used to fulfill Liberal Arts elective requirements.)

#### **Change in prerequisite(s)**

### ENG 121 ENGLISH COMPOSITION I 3 credits (3-0)

*Prerequisite(s):* A passing score on the writing portion of the College Placement Test or a grade of C or better in ENG 010; completion of RDG 009 with a C or better or a score on the reading portion of the College Placement Test that exempts the student from RDG 009.

#### **Change in prerequisite(s)**

### ENG 122 ENGLISH COMPOSITION II 3 credits (3-0)

*Prerequisite(s):* A grade of C or better in ENG 121 and a passing score on the reading portion of the College Placement Test or a grade of C or better in ENG 121 and a grade of C or better in RDG 011.

#### **Change in prerequisite(s)**

### ENG 125 ENGLISH COMPOSITION II: WRITING ABOUT LITERATURE 3 credits (3-0)

*Prerequisite(s):* A grade of C or better in ENG 121 and a passing score on the reading portion of the College Placement Test or a grade of C or better in ENG 121 and a grade of C or better in RDG 011.

### ENG 131 RESEARCH, COMPOSITION AND PRESENTATION I 2 credits (2-0)

*Prerequisite:* A passing score on the College Placement Test or a grade of C or better in ENG 010.

Written and oral communication skills for students in the Mecomtronics Engineering Technology and Telemedia Communications Technology programs. Students read and write technical documents and prepare a variety of written and oral projects and a documented research report. Develop competence in clear, correct, effective written English. Students will write between 5,000 and 7,000 words, including drafts and revisions, present two formal oral reports and learn basic word processing skills.

### ENG 132 RESEARCH, COMPOSITION AND PRESENTATION II 2 credits (2-0)

*Prerequisite:* A grade of C or better in ENG 131  
Continuation of ENG 131. Emphasizes more complex written projects, oral reports and presentations and a documented field research report. In addition, the student develops competence in the reading and writing of technical documents, the analysis and interpretation of written material and the use of written sources as the starting point for expository writing. Students continue to develop interviewing, oral communication and presentation skills and learn how to prepare visual materials. Students will write between 5,000 and 7,000 words, including drafts and revisions, and present two formal oral reports. For Mecomtronics Engineering Technology and Telemedia Communications Technology majors.

### ENG 133 RESEARCH, COMPOSITION AND PRESENTATION III 2 credits (2-0)

*Prerequisite:* A grade of C or better in ENG 132  
Continuation of ENG 132. Emphasizes more complex written projects—augmentation and persuasion—and a documented research project that integrates oral reports and presentations. In addition, students develop additional competence in the reading and writing of technical documents, the analysis and interpretation of written material—including poetry, drama and fiction—and the use of written sources as the starting point for expository writing. Students polish interviewing, oral communication and presentation skills; prepare visual materials; participate in team writing projects and prepare a resume. Students will write between 5,000 and 7,000 words, including drafts and revisions, and present two formal oral reports. For Mecomtronics Engineering Technology and Telemedia Communications Technology majors.

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## ENGLISH AS A SECOND LANGUAGE

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#### **Change in course description**

### EST 009 ENGLISH AS A SECOND LANGUAGE TRANSITION 4 credit equivalents (3-1)

For former ESL students whose test scores show they need intensive work to improve their writing abilities. Develop the ability to write in Standard American English. Provides instruction in sentence structure, punctuation and usage, taking into consideration the needs of second language learners; students regularly practice writing effective sentences, paragraphs and short essays. This course is in place of ENG 009 and students may have to enroll in ENG 010 after successfully completing EST 009. "C" is the minimum acceptable grade for movement from one remedial/developmental level to another for completion of remediation/developmental requirements.

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## HEALTH

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#### **Change in prerequisite**

### HED 209 CHILD HEALTH AND NUTRITION 3 credits (3-0)

*Prerequisite:* None

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## **HOTEL, RESTAURANT, AND INSTITUTION MANAGEMENT**

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### ***Change in credit and contact hours***

HRI 109

PROFESSIONAL CULINARY TECHNIQUES

3 credits (1-4)

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## **LEGAL STUDIES**

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### ***Change in prerequisite***

LET 104

PROPERTY TRANSACTIONS

3 credits (3-0)

*Prerequisites: LET 101 AND 113*

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## **MARKETING ART AND DESIGN**

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### ***Change in contact hours***

MAD 121

GRAPHICS FOR COMPUTER AUTHORS AND PRESENTERS

3 credits (2-2)

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## **MATHEMATICS**

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MAT 123

GE MAT

INTRODUCTION TO PROBABILITY AND STATISTICS

3 credits (3-0)

The general education designation for this course was omitted from the 1997-99 catalog.

MAT 141

GE MAT

MATHEMATICS FOR TELECOMMUNICATIONS I

2 credits (2-0)

*Prerequisite: MAT 013 or equivalent*

Basic mathematics emphasizing arithmetic, basic algebraic manipulation and graphing. Topics include: Mathematical logic, number systems, significant digits, scientific notation, operations on polynomials, solving linear equations, analytic geometry, graphing linear equations, systems of equations, ratio and proportion. For Telemedia Communications Technology majors.

MAT 142

GE MAT

MATHEMATICS FOR TELECOMMUNICATIONS II

2 credits (2-0)

*Prerequisite: MAT 141*

Emphasizes algebra and trigonometry, also introducing statistics. Topics include: essentials of right angle trigonometry, graphs of sine and cosine, basic trigonometric identities, factoring, algebraic fractions, fractional equations, quadratic equations, introduction to statistical ideas, types of data and graphical presentations of non-quantitative data. For Telemedia Communications Technology majors.

MAT 145

GE MAT

INTEGRATED MATHEMATICS I

2 credits (2-0)

*Prerequisite: MAT 014 or two years of high school algebra and appropriate score on the College Placement Test.*

A collaborative learning, project-oriented course for technical students. This is the first semester of a four-semester sequence that culminates with topics in calculus. Its purpose is to make students aware of the mathematical concepts needed to compete in the twenty-first century. Students will

apply problem-solving techniques using real world situations from their technical and science courses. Topics include functions, number sense, number bases, use of the graphing calculator, basic trigonometry, polynomial equations, elementary statistics, logic, analytical geometry, transforming real world situations into mathematical models, properties of basic geometric figures, ratio and proportion, scientific notation and conversion of units.

MAT 146

GE MAT

INTEGRATED MATHEMATICS II

2 credits (2-0)

*Prerequisite: MAT 145*

The second semester of a four-semester sequence that culminates with topics in calculus. Topics from the previous semester will be reinforced and expanded upon. Topics include functions, number sense, use of the graphing calculator, trigonometry, polynomial, rational and radical equations, elementary statistics, analytical geometry, transforming real world situations into mathematical models, properties of geometric figures, ratio and proportion.

MAT 241

GE MAT

MATHEMATICS FOR TELECOMMUNICATIONS III

2 credits (2-0)

*Prerequisite: MAT 142*

Probability and descriptive statistics. Topics include: graphical presentations of quantitative data, measures of central tendency, measures of dispersion, elementary probability theory, random variables, probability distributions, binomial distribution, Poisson distribution and normal distribution. For Telemedia Communications Technology majors.

MAT 242

GE MAT

MATHEMATICS FOR TELECOMMUNICATIONS IV

2 credits (2-0)

*Prerequisite: MAT 241*

Algebra and discrete math. Topics include: fractional exponents, radicals, logarithmic functions, logarithmic and exponential equations, graphs, Euler circuits, Hamiltonian cycles, trees, minimal spanning trees, shortest route problems and scheduling problems. For Telemedia Communications Technology majors.

MAT 245

GE MAT

INTEGRATED MATHEMATICS III

2 credits (2-0)

*Prerequisite: MAT 146*

The third semester of a four-semester sequence that culminates in topics in calculus. Topics from the previous semester will be reinforced and expanded upon. Topics include polynomial functions, rational functions, radical functions, trigonometry, exponential functions, logarithmic functions, probability and statistics and conic sections.

MAT 246

GE MAT

INTEGRATED MATHEMATICS IV

2 credits (2-0)

*Prerequisite: MAT 245*

The final semester of a four-semester sequence that introduces topics in calculus. Topics include limits, the derivative, the definite integral and integration. Calculus topics will be based on technical applications and computer software will be utilized to solve problems.

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## **MECOMTRONICS**

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### **MCT 102 SUPPORT AND MAINTENANCE OF COMPUTER SYSTEMS**

**2 credits (1-2)**

*Prerequisites:* MCT 101 and 103

*Corequisites:* MCT 104 AND 106; PHY 146; MAT 146, and ENG 132

Learn how to support, maintain, upgrade and troubleshoot the hardware and software of personal computers. Learn about software licensing requirements, and install and upgrade applications and operating system software; use the Internet and manufacturer's computer bulletin boards to download software updates and technical specifications; install and replace internal computer devices such as drives, cards and memory and learn about compatibility between hardware devices. Students troubleshoot hardware and software malfunctions. For Mecomtronics Engineering Technology majors.

### **MCT 103 FOUNDATIONS OF MECOMTRONICS**

**4 credits (3-3)**

*Corequisites:* MCT 101, PHY 145, MAT 145, and ENG 131

A project-oriented course that provides a foundation for technical studies within the Mecomtronics program. Topics in Computer Aided Drafting cover mechanical, electrical and assembly drawings. Electrical and mechanical principles are introduced through various product development activities. Product characteristics and specifications are explored through the use of measuring instruments, manufacturers' data and study of properties of materials.

### **MCT 104 ELECTRICAL AND MECHANICAL POWER SYSTEMS**

**4 credits (3-3)**

*Prerequisite(s):* MCT 101 and MCT 103

*Corequisite(s):* MCT 102, MCT 106, MAT 146, PHY 146, and ENG 132

A study of electrical and mechanical power components and systems used in the transmission of mechanical power and the distribution of electrical power. Topics include analysis of electric circuits; electromagnetic devices and their use in systems; discrete semiconductor switching devices; hydraulic and pneumatic power devices; types and uses of electric motors and generators as well as power distribution systems. Troubleshooting and repair of hydraulic, pneumatic control equipment and electrical/electronic systems will be studied through a number of industry-based projects.

### **MCT 106 AUTOMATED SYSTEMS**

**4 credits (3-3)**

*Prerequisite(s):* MCT 101 and MCT 103

*Corequisite(s):* MCT 102, MCT 104, MAT 146, PHY 146, and ENG 132

A study of theory, performance and applications of automated systems presented through a number of industry-based projects. Topics include open and closed loop control systems and their electrical and mechanical control components, electronic controllers, numerical control and robotics equipment, PLC controlled operation and material handling systems.

### **MCT 201 TELECOMMUNICATIONS WITH INDUSTRIAL APPLICATIONS**

**3 credits (2-3)**

*Prerequisite(s):* MCT 102, MCT 104, and MCT 106

*Corequisite(s):* MCT 203, MCT 205, ENG 133, MAT 245 and PHY 245

Provides a background in the theory of telecommunications and hands-on experience installing and administering a network. Learn technical characteristics of telecommunications, such as protocols, transmission characteristics, data representation, carrier techniques and multiplexing. Evaluate and select network components, install network hardware, software and cabling, troubleshoot network malfunctions and perform network administration tasks. For Mecomtronics Engineering Technology majors.

### **MCT 202 SPECIAL TOPICS IN ENGINEERING TECHNOLOGY**

**3 credits (3-0)**

*Prerequisite(s):* MCT 201, MCT 203, and MCT 205

*Corequisite(s):* MAT 246 and PHY 246

An introduction to current topics in computer and engineering technology. Topics are one or more of the following areas: Microelectronics and Semiconductor Manufacturing, Electrical Power Generation and Distribution, Electronic Communications, Computer Engineering, Biomedical Equipment, Instrumentation and Transportation Technology.

### **MCT 203 CONTROL AND AUTOMATION OF MANUFACTURING SYSTEMS**

**3 credits (2-3)**

*Prerequisite(s):* MCT 104, MCT 106

*Corequisite(s):* ENG 133, MAT 245, MCT 201, MCT 205 and PHY 245

A study of the theory, performance and application of Automated Manufacturing Systems, Programmable Logic Controls (PLC), Manufacturing Work Cells, Transportation of Materials during the Manufacturing Process and Automated Inspection Techniques. Topics include components and operation of hydraulic, pneumatic, electric drives and automated inspection techniques and their control. Industry-based projects are used to set-up, operate, analyze and control various automated manufacturing systems.

### **MCT 205 MANUFACTURING PROCESSES AND QUALITY MANAGEMENT**

**4 credits (3-3)**

*Prerequisite:* MCT 106

*Corequisite(s):* MCT 203, ENG 133, MAT 245 and PHY 245

A study of the theory, performance and application of manufacturing processes, prototyping and assembly along with methods of statistical process control. Topics include Product Realization, Computer Aided Manufacturing, Prototyping and Principles of Electronic Product Manufacturing and Assembling, Reliability and Quality Decisions Based on Cost. Industry-based projects are used to manufacture and produce quality products using ISO 9000 quality standards.

## MCT 206

### CAPSTONE PROJECT

3 credits (2-3)

*Prerequisite(s): MCT 201, MCT 203 and MCT 205*

*Corequisite(s): MAT 246, PHY 246*

A culmination of studies through a comprehensive project which validates knowledge and skills acquired through Mecomtronics Engineering Technology program. Students will design, develop and produce a product or a process using methods and techniques consistent with industrial practices requiring a formal written report and oral presentation.

## MCT 208

### MECOMTRONICS AND TELEMEDIA TECHNOLOGY FIELD EXPERIENCE

3 credits (1-12)

*Prerequisites: Mecomtronics Technology Field Experience — MCT 102, MCT 104, and MCT 106; Telemedia Technology Field Experience — TCT 104 and TCT 122*

A cooperative work experience program employing students in a Mecomtronics or a Telemedia position in order to gain practical experience necessary for success in these technical fields. Supervision of the departmentally approved position is provided by the College through on-the-job visits and individual progress review sessions. Students are required to establish learning objectives related to their positions in order to effect the attainment of specific job competencies. Students attend a weekly, one-hour seminar on Campus and work a minimum of 180 hours a semester.

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## MECHANICAL ENGINEERING TECHNOLOGY

### *Change in prerequisites*

MEC 112

### MANUFACTURING PROCESSES AND MATERIALS II

4 credits (3-3)

*Prerequisites: MCT 101 and MEC 111*

### *Change in prerequisites*

MEC 219

### DYNAMICS OF MACHINE ELEMENTS

3 credits (2-3)

*Prerequisites: MAT 110, MCT 101, MEC 123, PHY 115, SPE 121*

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## MEDICAL LABORATORY TECHNOLOGY

### *Change in prerequisite*

MED 212

### MEDICAL TECHNOLOGY III

8 credits (4-16)

*Prerequisite: BIO 211*

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## PHYSICAL EDUCATION

PED 120M

### GOLF FOR PHYSICAL EDUCATION MAJORS

1 credit (0-2)

Includes organizational skills, learning principles and the correct mechanics of a golf swing. Students will be required to develop lesson and block plans, and required to teach. For Physical Education majors.

PED 127M

### TENNIS FOR PHYSICAL EDUCATION MAJORS

1 credit (0-2)

Includes organizational skills, learning principles and the correct mechanics of tennis skills. Students will be required to develop lesson and block plans, and be required to teach. For physical education majors.

PED 143M

### SWIMMING FOR PHYSICAL EDUCATION MAJORS

1 credit (0-2)

Includes organizational skills, learning principles and development of swimming skills. Students will be required to develop lesson and block plans, and be required to teach. For Physical Education majors.

### *Change in course title*

PED 210

GE PED

### SCIENTIFIC PRINCIPLES OF FITNESS

3 credits (3-0)

PED 225

### FIRST AID, CPR AND SAFETY EDUCATION

3 credits (3-0)

The theory and practice of basic life saving skills and accident prevention. Topics covered include basic first aid skills, rescue breathing and cardiopulmonary resuscitation (CPR). The ability to recognize serious medical emergencies and the recommended course of action are the basic elements of this course. National Safety Council certification will be given to qualified students.

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## PHYSICS

PHY 141

### FOUNDATIONS OF PHYSICS I

2 credits (1-2)

*Corequisite: MAT 141*

Algebra-based physics. Topics include units, kinematics, dynamics, work and energy, geometric optics and optical instruments.

Appropriate computer and laboratory experience included. The first semester of a four-semester sequence. For Telemedia Communications Technology majors.

PHY 142

### FOUNDATIONS OF PHYSICS II

2 credits (1-2)

*Prerequisite: PHY 141*

*Corequisite: MAT 142*

A continuation of PHY 141. Topics include harmonic motion, wave motion, sound, electrostatics and direct current circuits.

Appropriate computer and laboratory experience included. The second semester of a four-semester sequence. For Telemedia Communications Technology majors.

PHY 145

### MECOMTRONICS PHYSICS I

2 credits (1-2)

*Corequisites: MAT 145, MCT 101, MCT 103, and ENG 131*

An activity-based physics course emphasizing the development of problem-solving and laboratory skills. Provides a concurrent presentation of the core scientific knowledge needed to support the technological courses in

engineering technology curricula. Topics include kinematics, dynamics, conservation of energy and momentum, fluids, thermodynamics, properties of materials, electrostatics and electric circuits. The first semester of a four-semester algebra and trigonometry-based physics sequence in which topics will be revisited and explored in increasing depth. For technology students.

**PHY 146**  
**MECOMTRONICS PHYSICS II**  
**2 credits (1-2)**

*Prerequisites: PHY 145, MCT 102, MCT 104, MCT 106, and ENG 132*

*Corequisites: MAT 146*

An activity-based physics course emphasizing the development of problem-solving and laboratory skills. Provides a concurrent presentation of the core scientific knowledge needed to support the technological courses in engineering technology curricula. Topics include kinematics, dynamics, conservation of energy and momentum, fluids, simple and damped harmonic motion, fluids, thermodynamics, properties of materials, electrostatics, electric circuits, magnetism and optics. The second semester of a four-semester algebra and trigonometry-based physics sequence in which topics will be revisited and explored in increasing depth. For technology students.

**PHY 241**  
**FOUNDATIONS OF PHYSICS III**  
**2 credits (1-2)**

*Prerequisite: PHY 142*

*Corequisite: MAT 241*

Algebra-based physics. A continuation of PHY 142. Topics include magnetism, electromagnetism, alternating currents, electromagnetic waves and physical optics. Appropriate computer and laboratory experience included. The third semester of a four-semester sequence. For Telemedia Communications Technology majors.

**PHY 242**  
**FOUNDATIONS OF PHYSICS IV**  
**2 credits (1-2)**

*Prerequisite: PHY 241*

*Corequisite: MAT 242*

A continuation of PHY 241. Topics include temperature and heat, motion in two dimensions, momentum, angular momentum and rotational motion.

Appropriate computer and laboratory experience included. The fourth semester of a four-semester sequence. For Telemedia Communications Technology majors.

**PHY 245**  
**MECOMTRONICS PHYSICS III**  
**2 credits (1-2)**

*Prerequisites: PHY 146, MCT 201, MCT 203, MCT 205, and ENG 133*

*Corequisites: MAT 245*

An activity-based physics course emphasizing the development of problem-solving and laboratory skills. Provides a concurrent presentation of the core scientific knowledge needed to support the technological courses in engineering technology curricula. Topics include kinematics, dynamics, conservation of energy and momentum, simple

and damped harmonic motion, fluids, thermodynamics, properties of materials, electrostatics and electric circuits, magnetism and optics, atomic structure and quantization. The third semester of a four-semester algebra and trigonometry-based physics sequence in which topics will be revisited and explored in increasing depth.

**PHY 246**  
**MECOMTRONICS PHYSICS IV**  
**2 credits (1-2)**

*Prerequisite: PHY 245*

*Corequisites: MAT 246, MCT 206, and MCT 202*

An activity-based physics course emphasizing the development of problem-solving and laboratory skills. This course will provide a concurrent presentation of the core scientific knowledge needed to support the technological courses in engineering technology curricula. Topics include kinematics, dynamics, conservation of energy, thermodynamics and optics, atomic and molecular physics. The fourth semester of a four-semester algebra and trigonometry-based physics sequence in which topics will be revisited and explored in increasing depth.

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**PSYCHOLOGY**

***The course prerequisite was omitted from the 1997-99 catalog.***

**PSY 219**  
**THEORIES OF PERSONALITY**  
**3 credits (3-0)**

*Prerequisite: PSY 123*

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**RESPIRATORY CARE**

***The following course numbers have been changed:***

Old number: RST 105 PRINCIPLES OF VENTILATORY SUPPORT

New number: RST 208

Old number: RST 106 CLINICAL PRACTICE II

New number: RST 209

Old number: RST 108 CLINICAL PRACTICE III

New number: RST 209

Old number: RST 204 CARDIOPULMONARY PHARMACOLOGY

New number: RST 207

***Change in course number, title and credits:***

Old: RST 205 ADVANCED CONCEPTS IN RESPIRATORY CARE  
 3 credits

New: RST 211 PEDIATRIC/NEONATAL RESPIRATORY CARE  
 2 credits

**RST 210**  
**CARDIOPULMONARY EVALUATION**  
**2 credits (2-2)**

Invasive and non-invasive diagnostic and monitoring procedures including roentgenography, electrocardiography, pulmonary function testing, hemodynamic monitoring, arterial blood gas analysis, patient interviewing and physical assessment.

**RST 212****LONG-TERM, HOME AND REHABILITATIVE CARE****2 credits (2-2)**

Analysis of the goals and methods underlying the provision of respiratory care in non-acute settings. Includes standards and regulations governing non-acute respiratory care, team planning, patient selection, program design and provision and documentation of various clinical services in the home and in long-term care and rehabilitation facilities. Includes cost, reimbursement and ethical issues.

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**SMALL BUSINESS MANAGEMENT**


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**SBM 110****ACCOUNTING FOR SMALL BUSINESS****4 credits (4-0)**

Focuses on accounting as applied in the small business setting. Emphasizes small business record keeping from basic journalizing to year-end closing and financial statement preparation. Use of computerized general ledger and other software will be employed to accomplish the above mentioned tasks. Also covers managerial issues and demonstrates use of basic analytical tools for problem solving at the small business level.

**SBM 120****SMALL BUSINESS MANAGEMENT****3 credits (3-0)**

Introduces the student to the principles of small business management and the functions of planning, organizing, directing, controlling, financing and staffing a small business enterprise.

**SBM 130****MARKETING AND SALES FOR SMALL BUSINESS****3 credits (3-0)**

For the small business owners/entrepreneurs looking to improve their marketing skills in today's domestic, global and international business environments. Through a case study format with additional emphasis on other relevant functional areas of business, the student will come to fully understand all activities and processes involved in the flow of goods, services, ideas and events from producer and/or manufacturer to consumers. Through this type of analysis the small business owner/entrepreneur will be able to incorporate a systems approach, to fully understand the marketing and sales conditions being affected and to analyze the problems as well as the strategies used in solving these problems.

**SBM 210****ADVERTISING AND PROMOTION FOR SMALL BUSINESS****3 credits (3-0)**

Techniques of advertising and sales promotion to increase sales. Topics include: policies and procedures used in planning and preparing advertisements, evaluation and selection of media, planning and coordinating advertising, sales promotion and facility layout for small business.

**SBM 220****LEADERSHIP AND SUPERVISION****3 credits (3-0)**

Learn about leadership and supervision in modern organizations. Introduces a variety of behavioral and

managerial leadership theories and research findings such as the Ohio Studies, participative leadership. Case studies, experimental exercises and the media are used to stimulate classroom discussion.

**SBM 230****RISK AND FINANCIAL MANAGEMENT****3 credits (3-0)**

Introduces the fundamental principles of risk and financial management. Content focuses on insurance, consumer and trade credit, budgeting, banking, investing, loans and other financial considerations facing owners of small business.

**SBM 240****COOPERATIVE EDUCATION/INTERNSHIP IN SMALL BUSINESS****3 credits (1-12)**

*Prerequisite:* Senior status in Small Business Management curriculum or written permission of department chair. Integration of classroom study with specific planned periods of learning through work experience, Co-op or internship-based. The course utilizes a seminar approach with performance-based human relations activities and individual student objectives that are job-related and employer-evaluated.

**SBM 250****SEMINAR IN ENTREPRENEURIAL STUDIES****3 credits (3-0)**

*Prerequisites:* BUS 101, SBM 110, SBM 120, SBM 130, SBM 210 or permission of department chairperson.

*Corequisites:* SBM 230

Enhances the working knowledge required to manage a small business, considering both domestic and global implications. Learn the differences between business ownership and entrepreneurship. Emphasizes the real-world financing of entrepreneurship, mergers and acquisitions as they apply to current business practices. Students will go beyond the rudiments of "discovering a good business concept" to analyzing and developing a comprehensive plan to test the profitability potential of the venture. Using the business plan approach, students will conduct the research and investigation required to determine the viability of starting, buying or selling an existing business. Case studies will include in-depth financial analyses of successful business.

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**TELEMEDIA**


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**TCT 103****PRODUCT MAINTENANCE I (DIGITAL)****4 credits (3-3)**

*Corequisites:* MCT 101, MAT 141, PHY 141, and ENG 131

Introduces a variety of digital circuits and how these circuits relate to computers and telecommunications. Topics include boolean algebra, karnaugh mapping, combinatorial and sequential circuits, decoders, multiplexers, registers and counters, UARTS and modems. An introduction to RS232 and other serial interfaces is given. Subjects specific to computers are covered and include the boot process, drivers, busses, interrupts, sound and video boards and an overview of windows, DOS and diagnostic programs. Extensive use of computer simulation software is an integral component of the course. Students are expected to complete individual as well as team projects.

**TCT 104**  
**PRODUCT MAINTENANCE II (ANALOG)**

**4 credits (3-3)**

*Prerequisites:* TCT 103 and MCT 101

*Corequisites:* MAT 142, PHY 142 and ENG 132

An introduction to the basic understanding of electronic circuits and electronics. Includes AC/DC circuits, semiconductor devices, integrated mixed analog and digital circuits and active filters. Introduces communication topics such as modulation, multiplexing techniques and transmission mediums. Extensive use of computer simulation software is an integral component of the course. Students are expected to complete individual as well as team projects.

**TCT 122**  
**MULTIMEDIA PRESENTATIONS**

**3 credits (2-3)**

*Prerequisites:* MAD 121

*Corequisites:* ENG 132

Discusses the use of multimedia technology and its inclusion in the production of marketing presentations. Hardware components needed to create a multimedia environment, with special consideration given to the MPC Specifications standards, are utilized in the creation of team projects. Hardware studied includes video cameras, digital cameras, video capture boards, microphones, monitors, speakers, audio and graphics boards, hard drives and related connectors and processors and CD-ROM drives. Environmental requirements for the design of model multimedia products are examined. This course is project-based and will culminate in the development of a multimedia marketing presentation by the students. These computer-based presentations will demonstrate the assimilation of the multimedia building blocks of text, graphics, video and sound into a multimedia production. Both the World Wide Web and interactive learning tools are utilized.

**TCT 201**  
**PC AND LAN HARDWARE**

**4 credits (3-3)**

*Prerequisite:* TCT 104

*Corequisites:* MAT 241 and PHY 241

Focuses on the hardware aspects of networking. Learn to upgrade, repair and trouble shoot workstation hardware through a series of hands-on objective coordinated projects. Learn the basics of networking and how to connect a workstation to a network. Concentrates on the hardware components and configurations of the personal computer. Topics include modems, their usage and set-up. Local area networking will expose the student to a variety of communication media as well as setting up print services.

**TCT 202**  
**REMOTE ACCESS AND DATA ACQUISITION**

**4 credits (3-3)**

*Prerequisites:* TCT 201 and TCT 221

*Corequisites:* MAT 242 and PHY 242

Explores methods used to gain access to a network or network entity along with techniques of data acquisition and analysis. A studio-oriented approach to explore key topics in data acquisition and remote access. Students use state-of-the-art software products such as LabVIEW and HP OpenView to complete the objectives of this course.

**TCT 221**  
**WIDE-AREA NETWORKING I**

**4 credits (3-3)**

*Prerequisites:* TCT 104 and TCT 122

*Corequisites:* MAT 241 and PHY 241

Introduces the fundamental concepts of data communications for wide-area networks. Video and teleconferencing are the applications through which the students develop an understanding of modern telecommunication concepts and necessary hardware. Network simulation is used by the students in the development of these concepts. Network access, types of service and protocols are covered. An understanding of the Public Switched Telephone Network and internets is developed.

**TCT 222**  
**WIDE-AREA NETWORKING II**

**4 credits (3-3)**

*Prerequisites:* TCT 221 and TCT 201

*Corequisites:* MAT 242 and PHY 242

A hands-on hardware centered course continues the development of networking concepts begun in Wide-Area Networking I (TCT 221). Configure and troubleshoot TCP/IP networks and develop an understanding of network routing. Configure Cisco routers and establish a Videoconference over wide-area networks. Simulation of routed networks and protocol analyzers will be used to troubleshoot TCP/IP networks.

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