Course Descriptions

Course descriptions appear on the following pages alphabetically by course prefix. The three-letter prefix identifies subject area; the three digits that follow identify the particular course. Generally, courses numbered 100 or lower are academic foundation courses; courses numbered from 101 to 199 are first-year offerings; and 200-level courses are second-year offerings.

Each description specifies the course’s credit value, which determines the tuition charge and the extent to which the course contributes toward the credit requirements for a degree.

Throughout the course descriptions, the indicator at left identifies approved General Education courses. (See page 132 for details.)

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All courses require college-level competence in reading, writing, and basic mathematics unless otherwise specified. Minimum proficiency is determined by one of the following: college skills placement test; completion of required academic foundations courses in reading, writing, and computation; or evidence of equivalent academic preparation. Specific skill requirements and additional course prerequisites are noted in individual course descriptions.

Prerequisites and Corequisites

Some courses require specific prerequisites or corequisites.

- A prerequisite is a course that must be completed before a student is permitted to register for the more advanced course.
- A corequisite is a course that a student must take either prior to or while enrolled in the related course.

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General Education Electives

The development of competence in critical thinking, writing, speaking, problem-solving, and information literacy is essential to a student’s educational and career success. General Education courses provide students with the opportunity to develop these skills (see MCCC policy, page 24).

The following courses approved for the purposes of General Education at Mercer County Community College are regarded as General Education courses at many, but not all, other colleges and universities in New Jersey and other states. The Statewide Transfer Agreement guarantees transfer of all approved courses that meet General Education requirements for graduates from A.A. and A.S. programs transferring to New Jersey’s four-year public colleges and universities. Non-graduates may determine whether particular courses will meet requirements at other New Jersey colleges or universities via NJ Transfer (www.njtransfer.org). Students interested in transferring to out-of-state colleges and universities should consult the catalogs, websites, and staff of those institutions.

Students are advised to review the specific General Education requirements in their respective MCCC programs of study.

Written and Oral Communication in English

CMN 111 Speech: Human Communication
CMN 112 Public Speaking
ENG 101 English Composition I
ENG 102 English Composition II
ENG 112 English Composition II with Speech
(A.A.S. programs only)

Mathematics

MAT 108 Topics in Mathematics
MAT 110 Elementary Technical Mathematics
MAT 115 Algebra and Trigonometry I
MAT 116 Algebra and Trigonometry II
MAT 120 Mathematics for Liberal Arts
MAT 135 Intermediate Algebra with Applications
MAT 140 Applied College Algebra
MAT 146 Pre-calculus
MAT 149 Calculus for Social Sciences or Business
MAT 151 Calculus I
MAT 152 Calculus II
MAT 200 Statistics for Social and Health Sciences I
MAT 201 Probability and Statistics
for Science and Engineering
MAT 205 Statistics for Social and Health Sciences II
MAT 208 Linear Algebra
MAT 251 Calculus III
MAT 252 Differential Equations

Science

BIO 101 General Biology I
BIO 102 General Biology II
BIO 103 Anatomy and Physiology I
BIO 104 Anatomy and Physiology II
BIO 106 Human Anatomy
BIO 113 Biological Science Concepts
*BIO 114 Environmental Science Concepts
*BIO 115 Microbiological Science Concepts
BIO 201 Microbiology
BIO 203 Entomology
BIO 204 Ecology
BIO 208 Genetics
*BIO 215 Principles of Microbiology
CHE 101 General Chemistry I
CHE 102 General Chemistry II
CHE 105 Agricultural Chemistry
CHE 106 Chemical Science Concepts
CHE 107 General and Physiological Chemistry
CHE 201 Organic Chemistry I

Technology

COS 101 Introduction to Computer Science
COS 102 Computer Science I – Algorithms and Programming
IST 101 Computer Concepts with Applications
IST 102 Computer Concepts with Programming
IST 109 Introduction to Programming
IST 140 The Internet and Computer Technology

Social Science

* ANT 101 Anthropology
ECO 103 Basic Economics
ECO 111 Macroeconomics
ECO 112 Microeconomics
* GEO 101 Geography
* GEO 102 Cultural Geography
POL 101 The American Political System
POL 102 State and Local Government
POL 201 International Relations
PSY 101 Introduction to Psychology
PSY 206 Child Development
PSY 207 Developmental Psychology: Across the Life Span
SOC 101 Introduction to Sociology
SOC 102 Social Problems
Humanities

Literature
ENG 201 Introduction to Literature: Drama
ENG 202 Introduction to Literature: Novel
• ENG 203 World Literature I
• ENG 204 World Literature II
ENG 205 American Literature I
ENG 206 American Literature II
ENG 208 Modern American Novel
ENG 211 Shakespeare
ENG 212 Introduction to Literature: Poetry
• ENG 213 African American Literature
ENG 216 Literature Into Film
• ENG 221 Women in Literature
ENG 227 English Literature I
ENG 228 English Literature II
ENG 238 American History and Literature

Aesthetic Appreciation
ART 101 Art and Culture
ART 121 History of Art I
ART 122 History of Art II
ART 123 History of Modern Art
• ART 124 History of Non-Western Art
ART 125 Topics in Contemporary Art
CMN 107 Cinema
• DAN 101 Introduction to Dance and Culture
MUS 103 Introduction to Music
• MUS 155 History of Jazz and Blues
• MUS 156 History of American Pop Music
MUS 224 Music History and Literature I
MLIS 225 Music History and Literature II
PHO 110 History of Photography
THR 101 Introduction to Theatre
THR 210 Theatre History – Classical to Elizabethan
• THR 212 Central Voices in World Drama

Philosophy
PHI 102 Introduction to Philosophy
PHI 113 Logic
PHI 204 Ethics
PHI 205 Moral Choices
• PHI 210 Eastern Philosophy

Religious Studies
REL 101 Introduction to Religious Studies
• REL 102 Living World Religions

Foreign Language
ASL all American Sign Language courses
ARB all Arabic courses
CHI all Chinese courses
FRE all French courses
GER all German courses
ITA all Italian courses
JPN all Japanese courses
LAT all Latin courses
SPA all Spanish courses

Misc. Humanities
• SPA 110 Hispanic Culture

History
All courses in the Historical Perspective list additionally qualify as Humanities general education.

Historical Perspective

HIS 101 History of Western Civilization to 1648
HIS 102 History of Western Civilization Since 1648
HIS 105 United States History to 1865
HIS 106 United States History Since 1865
• HIS 109 African American History
• HIS 112 World History to 1500
• HIS 113 World History Since 1500
• HIS 213 Twentieth-Century World History
HIS 214 The United States Since 1945
• HIS 218 History of Latin America
• HIS 221 History of American Women
• HIS 231 Women in Antiquity

Diversity and Global Perspective

ANT 101 Anthropology
ARC 141 Architecture and Culture: International
ART 124 History of Non-Western Art
ART 126 African American Art
BUS 230 Global Environment of Business
CMN 214 Issues in Intercultural Communication in the United States
CMN 215 Gender and Communication
DAN 101 Introduction to Dance and Culture
ENG 203 World Literature I
ENG 204 World Literature II
ENG 213 African American Literature
ENG 221 Women in Literature
ENG 222 Children’s Literature
ENG 232 Post-Colonial Women Writers
GEO 101 Geography
GEO 102 Cultural Geography
HIS 109 African American History
HIS 112 World History to 1500
HIS 113 World History Since 1500
HIS 213 Twentieth-Century World History
HIS 215 The Holocaust and Other Genocides
HIS 218 History of Latin America
HIS 221 History of American Women
HIS 231 Women in Antiquity
HIS 232 Women in Europe Since 1500
HOS 115 Food and Culture
MUS 155 History of Jazz and Blues
MUS 156 History of American Pop Music
PHI 210 Eastern Philosophy
POL 201 International Relations
PSY 215 Human Sexuality
PSY 221 The Psychology of Women
REL 102 Living World Religions
SOC 132 Introduction to Women’s and Gender Studies
SOC 201 Marriage and the Family
SOC 209 Racial, Ethnic, and Minority Groups
SPA 110 Hispanic Culture
THR 212 Central Voices in World Drama
WGS 132 Introduction to Women’s and Gender Studies
WGS 221 Seminar in Women’s and Gender Studies
ACC—Accounting

ACC 106 Office Accounting I 3 credits
Basic accounting course designed for non-transfer students. Emphasizes the techniques of double-entry bookkeeping: journalizing, posting, adjusting and closing entries; and financial statement preparation.

ACC 108 Hospitality Accounting 3 credits
Introductory accounting course integrating the special accounting requirements of the hospitality industry with generally accepted accounting principles.

ACC 109 Food, Beverage, and Labor Cost Control 3 credits
Prerequisite: ACC 108 with a minimum C grade
Principles and theories underlying cost control as it applies to the hospitality industry. Problem-solving using spreadsheet software is integral component of instruction.

ACC 111 Principles of Financial Accounting 4 credits
Prerequisite: MAT 037 (or MAT 037A and 037B) or equivalent proficiency
Study of the accounting cycle and how accounting data impacts business decisions. Emphasis on understanding the "why" of accounting as well as the "how."

ACC 112 Principles of Managerial Accounting 4 credits
Prerequisite: ACC 111 with a minimum C grade
Study of the uses of accounting information for managerial decision-making. Areas covered include manufacturing, merchandising, and service cost systems; cost-volume-profit analysis; and budgeting and capital investment decision-making.

ACC 201 Intermediate Accounting I 3 credits
Prerequisite: ACC 200 with a minimum C grade
Detailed study of accounting theory and practice as they relate to cash; receivables; inventories; investments; property, plant and equipment; and intangible assets.

ACC 202 Intermediate Accounting II 3 credits
Prerequisite: ACC 201 with a minimum C grade
Continuation of ACC 201. Topics in the study of accounting theory and practice include liabilities, stockholder equity, cash flows, and leases.

ACC 203 Federal Income Taxation 3 credits
Prerequisite: ACC 201 with a minimum C grade
Study of income taxation as it applies to small businesses and individual taxpayers. Topics include gross income, exclusions, deductions, credits, exemptions, and capital gains. Computer software is used to prepare tax returns. [Fall offering]

ACC 204 Auditing 3 credits
Prerequisite: ACC 201 with a minimum C grade
Investigation into and application of the objectives and procedures governing auditing requirements, standards, and examinations. [Spring offering]

ACC 205 Office Accounting II 3 credits
Prerequisite: ACC 106 with a minimum C grade
Continuation of ACC 106. Topics include receivables and payables; merchandise inventory; plant and equipment; corporations; partnerships; and internal control.

ACC 207 Computerized Accounting 3 credits
Prerequisite: ACC 111 with a minimum C grade
Introduction to general ledger accounting on PCs. Students acquire a working knowledge of software packages currently used in industry.

ACC 214 Accounting for Non-Profit Organizations 3 credits
Prerequisite: ACC 111 with a minimum C grade
Study of generally accepted accounting principles as they apply to non-profit organizations, with emphasis on governmental agencies. Additional focus includes accounting for colleges and universities as well as hospitals and health organizations.

ACC 215 Cost Accounting 3 credits
Prerequisite: ACC 112 with a minimum C grade
Examination of the accounting practices to record and control material, labor, and overhead costs. Study includes job-order, process cost and standard cost systems for manufacturing and service firms.

ADV—Advertising + Graphic Design

ADV 101 Advertising Design I 3 credits
Prerequisite: DMA 105 or divisional permission
Study of the principles and concepts of layout and design as applied to a variety of advertising and graphic design assignments: ads, brochures, logos, posters, book jackets, and sales promotion material. Promotes familiarity with advertising agency and studio procedures as well as professional techniques for producing layouts, comprehensive, and finished art. [Spring and Summer offering]

ADV 102 Advertising Design II 3 credits
Prerequisites: ADV 101, ADV 201, DMA 105
Introduction to basic layout and typography as the fundamental language to graphic communication. No previous knowledge of layout and typography is presumed. Addresses the use of different typefaces to communicate visually desired effects, type forms, type indication and basic graphic design with type for layouts.

ADV 201 Advertising Design III: Portfolio 3 credits
Prerequisites: ADV 101, DMA 105 or divisional permission
Study of the advanced concepts and design principles used in planning visualizations and layouts for advertising and editorial presentations using art, photography, type, and illustrations. Survey of methods for developing ideas into graphic presentations and the intangibles that provide originality and variety in a creative field using the Macintosh computer. [Fall offering]

ADV 202 Advertising Design III: Portfolio 3 credits
Prerequisites: ADV 101, ADV 201, DMA 105 or divisional permission
Exploration and survey of a variety of methods for presenting art, design, and photography in a professional manner. Using traditional tools and the Macintosh computer, students prepare individual portfolios suitable for presentation to a client or for a job interview. [Spring offering]

ADV 210 Typography II: Publication Design 3 credits
Advanced study of the use of type as it relates to page layout, graphic communication and publication design using Macintosh electronic publishing technology. Students use page makeup software that integrates text and graphics for a variety of projects.
ADV 220 Illustration I 3 credits
Prerequisites: ART 102 and ART 104
with a minimum C grade or divisional permission
Introduction to the concepts, techniques, and skills of the contemporary illustrator, emphasizing that good illustration – product or journalistic – is a means of communication. Assignments involve book and magazine illustration, visualization, and exercises in rendering light and shadow, plus production of comprehensive art in various media. 1 lecture/4 studio hours

ADV 222 Illustration II: Digital Drawing 3 credits
Prerequisites: ART 102, ART 104, DMA 105
Interdisciplinary course combining illustration with other fine art and advertising design skills to create a professional commercial art portfolio. 1 lecture/4 studio hours

ADV 230 History of Graphic Design 3 credits
Prerequisites: ENG 101 or permission of instructor; Internet access for Web-based instruction
A survey of graphic design from its origins to present day. This overview of graphic design develops visual vocabulary, provides a cultural and historical context, and instructs students in researching areas of interest to broaden their knowledge of contemporary graphic design. 3 lecture hours

ANT—Anthropology

Social Science / Diversity and Global Perspective
ANT 101 Anthropology 3 credits
Corequisite: ENG 101 or college-level eligibility
Explores anthropology – the study of humankind in all places at all times – in its “four fields”: physical anthropology (the systematic study of humans as biological organisms); archaeology (the study of human cultures through the recovery and analysis of material remains and environmental data); linguistic anthropology (the study of human language); and cultural anthropology. 3 lecture hours

ANT 222 The Anthropology of Myths, Magic and Witchcraft 3 credits
Prerequisite: ENG 101 or college-level eligibility
Examines the supernatural belief systems and practices of various cultures. Myths, rituals, animism, witchcraft, magic, shamanism, and syncretic religions are critically analyzed to understand the integrative effects of the sacred world. From that foundation, study progresses with a cross-cultural, anthropological comparison of religion and the supernatural. 3 lecture hours

ARB—Arabic

Note: Students who have taken two or more years of a foreign language, and have done so in the last two years, should begin that language at the 200 level or switch to a new language. If there is doubt, placement will be determined by testing or consultation with the academic division.

Humanities
ARB 101 Beginning Arabic I 3 credits
The first in a sequence of courses designed for students with little or no prior knowledge of Arabic. Spoken communication in Arabic is both the end goal and the means of instruction. Emphasizes the four communicative skills in a culturally authentic context. Reading and writing are assigned out of class to facilitate effective listening and speaking practice in class. Basic grammar skills are also introduced. 3 lecture hours

ARB 201 Intermediate Arabic I 3 credits
Prerequisite: ARB 101 with a minimum C grade, placement by exam, or permission of instructor
The first in a sequence of courses designed for students with a mid to high novice level of competency in Arabic. Spoken communication in Arabic continues to be the end goal and the means of instruction. The four communicative skills of reading, writing, listening and speaking are applied to discussions and debates involving Arab culture, politics, and history. Fundamental grammar points are reviewed. 3 lecture hours

ARC—Architecture

Humanities
ARB 102 Beginning Arabic II 3 credits
Prerequisite: ARB 101 with a minimum C grade, placement by exam, or permission of instructor
The second in a sequence of courses designed for students with little or no prior knowledge of Arabic. Spoken communication in Arabic is both the end goal and the means of instruction. Emphasizes the four communicative skills in a culturally authentic context. Reading and writing are assigned out of class to facilitate effective listening and speaking practice in class. Basic grammar skills are also introduced. 3 lecture hours

ARC 102 Graphic Communication for Architecture 3 credits
Corequisite: ARC 121
A lecture/studio course aimed at developing architecture students’ graphic communication skills. Analytic and descriptive drawings of buildings, everyday objects, trees, plantings, and people are rendered using pencil, pen and ink, as well as through an introduction to digital imaging and computer-aided design software. 1 lecture/4 laboratory hours

ARC 104 Computers in Architecture 3 credits
Prerequisite: ARC 121
Corequisite: ARC 123
Introduction to the use of the computer in architecture as a three-dimensional design/drawing tool. Students build 3-D models using parametric modeling software and manipulate three-dimensional forms, scenes, colors, textures, lighting and cameras to design effective compositions. Applicable to Windows-based computers. 1 lecture/4 laboratory hours

ARC 121 Architecture Basic Design I 5 credits
Corequisite: ARC 102 or or divisional permission
Explores fundamental principles and elements of design: form, space, composition, systems, context, imagery, as well as functional and structural organizations. Solutions to architectural design projects are explored through presentation drawings and study models. Simple presentation graphics and model-building are introduced. [Fall offering] 1 lecture/8 studio hours

ARC 122 History of Architecture 3 credits
Survey of the development of architecture from ancient civilizations to 1860. Social, religious, economic, technological, and aesthetic factors are explored to understand fully their influence on the development of buildings and cities. 3 lecture hours

ARC 123 Architecture Basic Design II 5 credits
Prerequisite: ARC 121 with a minimum C grade
Further study of the fundamental principles and elements of architectural design through a series of projects having increased complexity and depth of expression using more advanced presentation graphic techniques. Emphasis continues on the development of process drawing and model-building skills to explore design ideas. [Spring offering] 1 lecture/8 studio hours
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
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<tbody>
<tr>
<td>ARC 227</td>
<td>Architecture Design I</td>
<td>5</td>
<td>Sophomore-level design course emphasizing the exploration and development of architectural design concepts and their translation into physical form. Three to four major design problems challenge the student's preconceptions about architecture and stimulate the growth of an architectural vocabulary. [Fall offering] 1 lecture/8 studio hours</td>
</tr>
<tr>
<td>ARC 228</td>
<td>Architecture Design II</td>
<td>5</td>
<td>Corequisite: ARC 227 with a minimum C grade Builds on the foundation of ARC 227. More advanced design challenges help the student to sharpen design skills and to continue expanding the architectural vocabulary. [Spring offering] 1 lecture/8 studio hours</td>
</tr>
<tr>
<td>ARC 285</td>
<td>Special Studies in Architecture Design</td>
<td>3</td>
<td>Prerequisites: ARC 228 with a minimum C grade and divisional permission Opportunity for students who have completed regular course offerings to continue their studies at advanced levels. Individual students and faculty develop a project contract that sets forth objectives, standards of quality, evaluation guidelines, and deadlines. [optional offering] 3 lecture hours</td>
</tr>
<tr>
<td>ART 121</td>
<td>History of Art I</td>
<td>3</td>
<td>Focus on the aesthetic and historical evaluation of artists, styles, and cultures from the prehistoric period through Gothic art. Color slides are analyzed and discussed. 3 lecture hours</td>
</tr>
<tr>
<td>ART 122</td>
<td>History of Art II</td>
<td>3</td>
<td>Survey of artists, styles, and cultures from the Renaissance through mid-19th century European and American art. Investigates the aesthetics of various movements. Color slides are analyzed and discussed. 3 lecture hours</td>
</tr>
<tr>
<td>ART 123</td>
<td>History of Modern Art</td>
<td>3</td>
<td>Comprehensive survey of the modern period in art beginning with Manet and continuing through the varied styles, schools, and movements of the 20th century. Color slides are analyzed and discussed. 3 lecture hours</td>
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</table>

**ART—Fine Arts, Art History**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>ART 101</td>
<td>Art and Culture</td>
<td>3</td>
<td>Introduction to major movements of Western art as they relate to cultural influences, expanding knowledge, technological change, and effects on modern society. Through studio work, students investigate the intellectual aspects of traditional drawing, painting and mixed media techniques. 2 lecture/2 studio hours</td>
</tr>
<tr>
<td>ART 102</td>
<td>Basic Drawing</td>
<td>3</td>
<td>Examines the fundamentals of seeing line and value through studies of nature, still-life arrangements, the human figure, and concepts of perspective. Various media are used including ink, charcoal, and graphite. 1 lecture/4 studio hours</td>
</tr>
<tr>
<td>ART 103</td>
<td>Freehand Drawing for Architects</td>
<td>3</td>
<td>A lecture/studio course for developing the architecture student's freehand drawing skills, with emphasis on analytic and descriptive drawings of buildings, everyday objects, trees, plantings and people. Media used are pencil, pen and ink, and felt tip pen. 1 lecture/4 studio hours</td>
</tr>
<tr>
<td>ART 104</td>
<td>Life Drawing</td>
<td>3</td>
<td>Experience in drawing the human figure and developing an understanding of form, volume, structure, and anatomy. Exercises include gesture drawing and sustained poses. Various media are used. 1 lecture/4 studio hours</td>
</tr>
<tr>
<td>ART 105</td>
<td>Two-Dimensional Design</td>
<td>3</td>
<td>Intensive investigation of such essential principles as form, line, space, color, balance, and unity in two-dimensional design. Projects are assigned in sequence leading to specific visual solutions. Various media are used. 1 lecture/4 studio hours</td>
</tr>
<tr>
<td>ART 106</td>
<td>Three-Dimensional Design</td>
<td>3</td>
<td>An intensive investigation of the use of the formal elements of art and design according to the principles of organization in three-dimensional composition. Various media, techniques, and equipment are introduced. 1 lecture/4 studio hours</td>
</tr>
</tbody>
</table>

**Diversity and Global Perspective**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 124</td>
<td>History and Theory of Modern Architecture</td>
<td>3</td>
<td>Explores the social conditions and major personalities that influenced architectural developments from the Industrial Revolution to the present. 3 lecture hours</td>
</tr>
<tr>
<td>ARC 140</td>
<td>Field Studies in Architecture and Urban Planning: America</td>
<td>3</td>
<td>Investigation of architectural characteristics and urban planning patterns in selected regions. Extended travel in groups creates an “immersion experience.” Students study/draw buildings, analyze physical characteristics of different environments, and consider the built environment’s impact on quality of life. [optional offering]</td>
</tr>
</tbody>
</table>

**GenEd**

- Humanities
- Fine Arts, Art History
- International
- Diversity and Global Perspective
ART 125  Topics in Contemporary Art  3 credits  
Prerequisite: ENG 101 or divisional permission
Exploration of trends and topics in contemporary art from 1945 to the present, involving a diverse range of artists who challenge preconceived notions of the role of art in today's society. Students learn to identify, analyze, and write about art through multi-media presentations, discussions, artists' talks, and a field trip.  3 lecture hours

ART 205  Printmaking II  3 credits  
Prerequisites: ART 150 with a minimum C grade
Continued exploration and development of surface, relief, and intaglio techniques.  1 lecture/4 studio hours

ART 104  Introduction to Art  3 credits  
Prerequisite: previous ceramics experience
Introduction to the Raku process. Students spend an intensive six-week period creating, glazing, and firing functional and sculptural ceramic objects.  1 lecture/4 studio hours

ART 130  Painting I  3 credits  
Prerequisite: ART 102 or ART 105 or divisional permission
Examination of the relationships of materials, media, and techniques in both figurative and abstract art. The elements of color and composition are introduced and explored. At the discretion of the instructor, students are advised to work in either acrylic or oil color.  1 lecture/4 studio hours

ART 141  Sculpture I  3 credits  
Introduction to modeling the human figure. Develops basic understanding of vocabulary of form while mastering technical skills, plus acquaintance with several media and with organizing form and space.  1 lecture/4 studio hours

ART 145  Beginning Ceramics: Handbuilding  3 credits  
Introduction to basic clay experience, devoted to the handbuilding techniques of pinch, drape, press, slab, and coil to produce functional and sculptural ceramic objects. Introduces the technical aspects of colored slips and glazing. Stresses development of a personal appreciation of form.  1 lecture/4 studio hours

ART 146  Beginning Ceramics: Wheel-Throwing  3 credits  
Introduction to basic clay experience, devoted to clay-forming techniques on the potter's wheel to produce functional and sculptural ceramic objects. Introduces the technical aspects of colored slips and glazing. Stresses development of a personal appreciation of form and function.  1 lecture/4 studio hours

ART 150  Printmaking I  3 credits  
Study of the basic concepts, techniques, tools, and materials required to work in the production of surface, relief, and intaglio prints. Paper selection, preparation of ink, and operation of the presses are discussed and demonstrated.  1 lecture/4 studio hours

ART 230  Painting II  3 credits  
Prerequisite: ART 130 with a minimum C grade
Training and experience in the observation and application of painting media, acrylic or oil. Involves guidance in transforming what is observed or conceived into graphic and plastic forms, including traditional challenges of painting and composition, working with light, color, weight, and dimension.  1 lecture/4 studio hours

ART 232  Advanced Painting and Drawing  3 credits  
Prerequisites: ART 104, ART 230 with a minimum C grade
Intensive course designed for the advanced student, making drawing and painting a unique and personal experience. Through instructor guidance, the student develops a personalized approach to composition, color, and technique. Includes classroom critiques, outside assignments, and possible field trips. [Spring offering]  1 lecture/4 studio hours

ART 233  Watercolor Painting  3 credits  
Prerequisite: ART 102 with a minimum C grade or permission of instructor
Combining technical knowledge with practice, introduces the beginning watercolor painter to the materials and techniques of the past and present. The student studies various approaches to painting with watercolor, tempura, and wash and acquires a basic understanding of the proper selection of paper, brushes, paints and equipment.  1 lecture/4 studio hours

ART 240  Raku Workshop  3 credits  
Prerequisite: previous ceramics experience
Introduction to the Raku process. Students spend an intensive six-week period creating, glazing, and firing functional and sculptural ceramic objects.  1 lecture/4 studio hours

ART 241  Sculpture II  3 credits  
Prerequisite: ART 141 with a minimum C grade
Continuation of ART 141 with refinement of presentation or where, when, and how the object is viewed. Concentration on a complete statement of form and space. Further exploration of several media, including clay figure and portrait modeling.  1 lecture/4 studio hours

ART 250  Printmaking II  3 credits  
Prerequisite: ART 150 with a minimum C grade
Continued exploration and development of surface, relief, and intaglio techniques.  1 lecture/4 studio hours

ART 280  Special Studies in Drawing  3 credits  
Prerequisites: ART 102, ART 104 with a minimum 3.0 GPA and/or divisional permission
Special course in specific art forms allows students who have completed regular course offerings to continue their studies at advanced levels. Individual students and faculty develop a project contract that sets forth objectives, standards of quality, evaluation guidelines, and deadlines.  [occasional offering]

ART 281  Special Studies in Art History  3 credits
Prerequisites: completion of 15 credits of art/architecture history with minimum 3.0 GPA, sophomore status and divisional permission
Special course in museum/gallery work for art history students who have completed regular course offerings and desire a supervised apprenticeship. Individual students and faculty develop a project contract that sets forth objectives, standards of quality, evaluation guidelines, and deadlines.  [occasional offering]

ART 283  Special Studies in Painting  3 credits  
Prerequisites: ART 232 and divisional permission
Special courses in specific art forms allow students who have completed regular course offerings to continue their studies at advanced levels. Individual students and faculty develop a project contract that sets forth objectives, standards of quality, evaluation guidelines, and deadlines.  [occasional offerings]

ART 284  Special Studies in Ceramics  3 credits  
Prerequisites: ART 146 and divisional permission

ART 285  Special Studies in Sculpture  3 credits  
Prerequisites: ART 241 and divisional permission

ART 286  Special Studies in Printmaking  3 credits  
Prerequisites: ART 250 and divisional permission
ASK—Academic Skills
See also COL—College Success. Applicability of these credits toward degree requirements is limited. Consult an academic advisor.

ASK 003 Study Skills 1 credit
Introduces basic study techniques including understanding and identifying learning styles and applying time management principles for study success. Course activities are designed to help students improve concentration, memorization and listening skills, lecture and textbook note-taking ability, critical reading strategies, and test-taking strategies using SQ3R and other study methods. 1 lecture hour

ASL—American Sign Language

ASL 101 American Sign Language I 3 credits
The first in a sequence of courses designed for students with little or no prior knowledge of ASL. Voiceless communication in ASL is both the end goal and the means of instruction. Communicative skills and basic grammar are introduced in a culturally authentic context. [satisfies foreign language requirement] 3 lecture hours

ASL 102 American Sign Language II 3 credits
Prerequisite: ASL 101 with a minimum C grade or permission of instructor
The second in a sequence of courses designed for students with little or no prior knowledge of ASL. Voiceless communication in ASL is both the end goal and the means of instruction. Communicative skills and basic grammar are introduced in a culturally authentic context. [satisfies foreign language requirement] 3 lecture hours

AUT—Automotive Technology

AUT 110 Introduction to Automotive Electronics 3 credits
Prerequisite: MAT 037 (or MAT 037A and 037B) or equivalent proficiency
Corequisite: AUT 111
An introduction to voltage, current and resistance, series and parallel circuits, batteries, and electronic components. Also covers wiring schematics, wire repair, and circuit troubleshooting. For automotive students. 3 lecture/1 laboratory hours

AUT 111 Automotive Service Fundamentals 5 credits
Corequisite: AUT 110
Introduction to the automobile and its operating systems. Emphasizes theories of operation, service facility practices and current servicing procedures, with detailed attention to each individual system including diagnosis and repair. Personal safety policies in the work environment are stressed in detail. 2 lecture/6 laboratory hours

AUT 112 Automotive Fuel Systems 3 credits
Prerequisites: AUT 110, AUT 111 with a minimum C grade
Examines automotive fuel systems in use today. Coverage includes fuel basics, electronic fuel injection (TBI), sequential port fuel injection, on-board diagnostics II (OBD II), and diesel fuel injection with focus on theory of operation, driveability diagnostic procedures, and use of computerized diagnostic equipment. 2 lecture/2 laboratory hours

AUT 113 Suspension, Steering and Alignment 4 credits
Prerequisites: AUT 110, AUT 111 with a minimum C grade
Theory of operation and service of vehicular suspension and steering systems, with emphasis on component inspection and replacement. Addresses four-wheel alignment with lab activities using a drive-on alignment rack and computer alignment machine. 2 lecture/4 laboratory hours

AUT 114 Automotive Electricity and Electronics 3 credits
Prerequisites: AUT 110, AUT 111 with a minimum C grade
How electrical/electronics principles are used in current automotive systems. Subjects include vehicle communications, starting and charging systems, wiring diagrams and manuals, chassis wiring service, passive restraints and other automotive accessories. Major emphasis is on diagnostic skills, testing procedures, and proper service and repair of components. 2 lecture/2 laboratory hours

AUT 115 Automotive Brake Systems 4 credits
Prerequisites: AUT 110, AUT 111 with a minimum C grade
The principles and servicing of both disc and drum brake systems used on today’s automobiles, including computer-controlled anti-lock braking systems. Emphasis on malfunction diagnosis, use of road testing techniques and visual brake inspection procedures, repair integrity, plus hydraulic theory and component machining operations. 2 lecture/4 laboratory hours

AUT 122 Internship in Automotive Technology I 1 credit
Prerequisites: AUT 110, AUT 111 with a minimum C grade
Coerequisites: AUT 211, AUT 212
Application of knowledge acquired from lecture and laboratory instruction to gain relevant on-the-job experience in repairing customer vehicles in an actual automotive service facility. The apprentice is supervised by an experienced service employee who works with the program coordinator in developing goals and evaluating performance. 300 work experience hours

AUT 123 Internship in Automotive Technology II 1 credit
Corequisites: AUT 114, AUT 115

AUT 221 Internship in Automotive Technology III 1 credit
Corequisites: AUT 213, AUT 224

AUT 222 Internship in Automotive Technology IV 1 credit
Corequisite: AUT 225

AUT 221 Automotive Emissions and Driveability 3 credits
Prerequisite: AUT 112 with a minimum C grade
Examines the relationship of automotive emissions with engine driveability concerns. Utilizing information presented in AUT 111 and AUT 112, proper diagnosis of driveability concerns and recommended repair procedures are explored to achieve the best performance and reduced emissions. Emission control devices are examined with an emphasis on operation and emission standards. 2 lecture/2 laboratory hours
AUT 212 Automotive Air Conditioning 3 credits  
Prerequisites: AUT 110, AUT 111 with a minimum C grade  
Examines automotive air conditioning/heating systems in use today, with topics ranging from fundamentals of refrigeration to automatic temperature control (ATC) system operation. Addresses proper diagnosis and repair of systems and components as well as environmental obligations.  
2 lecture/2 laboratory hours

AUT 213 Engine Service 4 credits  
Prerequisites: AUT 110, AUT 111 with a minimum C grade  
Diagnosis, failure analysis, and rebuilding procedures for automobile engines. Topics include engine operating principles, component measurement techniques, engine removal and installation, and service information usage for diagnosis. Each student is required to completely disassemble, diagnose, and assemble several four-cycle engines. Involves extensive use of special tools and equipment.  
2 lecture/4 laboratory hours

AUT 224 Manual Transmissions and Drivelines 3 credits  
Prerequisites: AUT 110, AUT 111 with a minimum C grade  
Study of automotive systems for torque multiplication and speed reduction includes the relationship of engine speed and vehicle speed and its effect on fuel economy. Other topics include clutch service, front and rear wheel drive applications, component replacement, differentials, diagnosis, removal and reinstallation procedures, and transmission overhaul. Involves extensive use of special tools and test equipment.  
2 lecture/3 laboratory hours

AUT 225 Automatic Transmission Service 3 credits  
Prerequisites: AUT 110, AUT 111, AUT 224 with a minimum C grade  
Principles of operation and proper diagnostic and repair procedures for current automatic transmissions and transaxles, including electronic computer-controlled designs. Covers basic hydraulic theory with emphasis on the use of test equipment for diagnosis and in-car service. Each student is required to disassemble, overhaul, and assemble several automatic transmissions and transaxles.  
2 lecture/3 laboratory hours

AVI—Aviation Technology

All flight training courses involving the use of an aircraft are taught in conjunction with Royal Karina Air Service at Trenton-Mercer Airport.

AVI 101 Aerospace Development 3 credits  
Historical approach to U.S. and international aviation development including man’s first efforts to fly, the development of aircraft, modern growth of the aerospace industry and the impact of aviation and flight on mankind.  
3 lecture hours

AVI 102 Aviation Transportation 3 credits  
Study of transportation systems and the aviation industry as they exist today, including applicable government organizations, controls, and regulations as well as career opportunities in aerospace.  
3 lecture hours

AVI 105 Aviation Weather 3 credits  
Study of the structure of the atmosphere and weather patterns. Examines weather hazards encountered by commercial pilots, including thunderstorms, turbulence, wind shear, visibility restrictions, icing, and hydroplaning. Coded weather reports, forecasts, weather charts and prognostic charts are utilized in class for flight planning and in-flight decision-making.  
3 lecture hours

AVI 111 Flight Concepts 2 credits  
Principles of flight and air navigation, evolution of modern aviation (civil and military), and the basic physiological difficulties experienced in flight. [Occasional offering]  
2 lecture hours

AVI 113 Flight I 2 credits  
Prerequisites: FAA medical, proof of U.S. citizenship or TSA approval  
Corequisite: AVI 131  
Flight training required to complete the private pilot program by acquiring the aeronautical skills necessary to meet the requirements for the private pilot certificate. Consists of approximately 50 hours of flight training. Special fee required.  
1 lecture/3 laboratory hours

AVI 114 Flight II 2 credits  
Prerequisites: AVI 113 with a minimum C grade, proof of U.S. citizenship or TSA approval  
Corequisite: AVI 132  
Required flight training for the commercial pilot certificate, for the student who has met the requirements for the private pilot certificate in Flight I. Special fee required.  
1 lecture/3 laboratory hours

AVI 131 Commercial Pilot I 3 credits  
Prerequisites: AVI 131, successful grade on FAA private pilot computer exam – airplanes  
Corequisite: AVI 113 or AVI 114  
Essentials to pass the Federal Aviation Administration private pilot examination. Subjects include introduction to airplane systems, airports, communications and air traffic control, weight and balance, meteorology, Federal Aviation Regulations, aeronautical charts, radio navigation, Aeronautical Information Manual, flight computer, medical factors of flight and cross-country flying.  
3 lecture hours

AVI 132 Commercial Pilot II 3 credits  
Prerequisites: AVI 114 Flight I with a minimum C grade  
Essentials to pass the Federal Aviation Administration commercial pilot examination. Subjects include introduction to airplane systems, airports, communications and air traffic control, weight and balance, meteorology, Federal Aviation Regulations, aeronautical charts, radio navigation, commercial pilot FARs, physiology of flight, environmental systems, flight planning and commercial flight maneuvers.  
3 lecture hours

AVI 203 Aircraft Components 3 credits  
Explores basic components and systems of the aircraft including air frames, power plants, wings and empennage, plus elementary concepts of engine operating theory and construction.  
3 lecture hours

AVI 208 Aviation Seminar 1 credit  
Guest speakers explain their role in the industry and share insights concerning prerequisite experience, the interview process, and prospects for employment.  
1 lecture hour

AVI 213 Flight III 3 credits  
Prerequisites: AVI 114 with a minimum C grade  
Corequisite: AVI 231 or MAT 115  
Continuation of flight training to obtain the commercial flight certificate, and beginning of instrument flight training. Student completes the solo cross-country requirements and develops a high degree of proficiency in commercial and primary maneuvers. Special fee required.  
1 lecture/4 laboratory hours

AVI 214 Flight IV 3 credits  
Prerequisites: AVI 213 with a minimum C grade  
Students develop a high degree of proficiency in single-engine commercial maneuvers and instrument flying. All flight requirements for the single-engine commercial and instrument rating are completed, and performance meets or exceeds the current FAA instrument and commercial Practical Test Standards. Special fee required.  
1 lecture/4 laboratory hours
COURSES

AVI 215 Aerodynamics 3 credits
Corequisite: MAT 115
Analysis of the fundamental theory and elements of applied aerodynamics provides the knowledge and background for safe and effective flying. Lab explores the basic concepts of airfoil angle of attack and lift/drag characteristics.
2 lecture/2 laboratory hours

AVI 216 Flight V 4 credits
Prerequisites: Rotary Helicopter Commercial Certificate with an Instrument Rating and proof of U.S. citizenship or TSA approval
Prepares students to meet and/or exceed requirements for the Single Engine Land FAA Commercial Pilot Certificate and an Instrument Rating. Subjects include advanced topics in aircraft performance, preflight procedures, operating procedures, maneuvers, aircraft systems, radio navigation, FAR's physiology of flight, environmental systems, air traffic systems and procedures, Aeronautical Information Manual, IFR Navigation systems, and IFR Charts and Approach Procedures.
2 lecture/4 laboratory hours

AVI 231 Commercial Pilot III 3 credits
Prerequisite: AVI 132
Corequisite: MAT 115
Complements Flight III and Flight IV courses, with basic information to pass the Federal Aviation Administration Instrument Pilot Examination. Subject areas include altitude instrument flying, instrument flight charts, IFR clearances, and IFR regulations.
3 lecture hours

AVI 233 Flight Instructor / Airplane 3 credits
Prerequisites: must have passed the FAA Commercial Pilot and Instrument Rating written tests and possess FAA Private Pilot Certificate, or permission of instructor
Corequisite: AVI 214
Prepares students to pass the Federal Aviation Administration FOI (Fundamentals of Instruction) and FIA (Flight Instructor / Airplane) computer examinations. Includes basic theory of learning and human behavior pertaining to flight instruction, flight instructor's responsibilities, flight training maneuvers, plus review of FARs flight planning and performance.
3 lecture hours

BCT—Building Construction Technology

BCT 104 Codes for Construction and Design 3 credits
Prerequisites: BCT 110, BCT 120
An overview of regulations for design and/or construction of residences and small buildings, including their applicability and intent subject to the interpretations imposed by the State of New Jersey.
2 lecture/2 laboratory hours

BCT 110 Building Construction Materials and Methods I 3 credits
A survey of materials and methods in building construction, emphasizing common construction systems primarily on low-rise light wood and steel structures. Addresses the fundamental processes, organization, and constraints of the construction industry. The building envelope, enclosure systems for thermal insulation, vapor retarders, air barriers, and moisture control are explored with an introduction to the general concepts of sustainable design.
3 lecture hours

BCT 112 Building Construction Materials and Methods II 3 credits
Prerequisites: BCT 110, BCT 120
Continued study of materials and methods in building construction with emphasis on concrete and steel frame structures and masonry load-bearing walls. Exterior wall cladding and curtain wall systems are examined relative to concepts of sustainable design.
3 lecture hours

BCT 120 Construction Graphics with AutoCAD 4 credits
Corequisites: BCT 110, DRA 190 or prior CAD experience
Introduction to the interpretation of construction drawings for residential and light commercial projects, cultivating an understanding of how plans, elevations, sections, and details relate to each other. Students render basic architectural drawings by hand as well as with CAD software, and consistently practice and apply informal sketching techniques.
2 lecture/4 laboratory hours

BCT 232 Construction Estimating 3 credits
Prerequisites: BCT 104, BCT 110, BCT 120, ENG 101 or divisional permission
Examination of the role of construction documents for producing construction job estimates, as well as the roles and responsibilities of the construction cost estimator for both residential and light commercial applications. Along with contracts and various bid types, computer estimating software applications are introduced.
3 lecture hours

BCT 234 Construction Contracts and Specifications 3 credits
Prerequisites: BCT 104, BCT 110, BCT 120, ENG 101 with a minimum C grade, or divisional permission
A detailed examination of construction documents along with methods for producing general, special, and technical sections of construction specifications. Case studies and class discussions contribute toward analysis of construction contracts and practices with regard to business law and liability, as well as contractor, architect, and engineer responsibilities. Students prepare several technical sections for a small commercial building.
3 lecture hours

BCT 236 Construction Project Administration and Management 3 credits
Prerequisites: BCT 232, BCT 234, or divisional permission
Introduction to the design/construction process, contract documents, organization of the construction firm, subcontractor relationships, records and reports, construction safety, and quality control. Bar chart and critical path method scheduling are introduced along with several commonly used computer applications for construction administration and management.
3 lecture hours

BIO—Biology

BIO 100 Introductory Biology 3 credits
Prerequisite: ENG 034
Corequisite: MAT 037 or MAT 042 or proficiency in basic algebra
Selected fundamental principles of biology for students who have not had high school biology or who need a review before taking other courses in biology, horticulture and the life sciences. Topics include scientific inquiry, chemistry of living organisms, techniques of observation, data gathering and analysis. [Does not fulfill any requirements for the Biology A.S. degree.]
3 lecture hours
<table>
<thead>
<tr>
<th>COURSES</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Science</strong></td>
<td><strong>BIO 101  General Biology I</strong> 4 credits</td>
<td></td>
</tr>
<tr>
<td><strong>Prerequisites:</strong> high school biology or BIO 100; high school chemistry or CHE 100; MAT 135 or equivalent <strong>Corequisite:</strong> ENG 101</td>
<td>Introduces fundamental concepts and principles of biology. Topics include biological chemistry, cell biology, metabolism and energy, cell reproduction, molecular biology, and inheritance. Investigative laboratory exercises develop skills in basic techniques and reinforce lecture material. Required for biology majors.</td>
<td>3 lecture/3 laboratory hours</td>
</tr>
<tr>
<td><strong>BIO 102  General Biology II</strong> 4 credits</td>
<td><strong>Prerequisite:</strong> BIO 101 with a minimum C grade</td>
<td></td>
</tr>
<tr>
<td><strong>Introduces fundamental concepts, principles, and applications of biology. Topics include photosynthesis; plant structure, growth and reproduction; animal diversity, form and function; evolution; population ecology; community ecology; and ecosystem dynamics. Investigative laboratory exercises develop skills in basic techniques and reinforce lecture material. Required for biology majors.</strong></td>
<td>3 lecture/3 laboratory hours</td>
<td></td>
</tr>
<tr>
<td><strong>BIO 103  Anatomy and Physiology I</strong> 4 credits</td>
<td><strong>Prerequisite:</strong> proficiency in basic algebra <strong>Corequisite:</strong> ENG 101 <strong>Systematic approach to the structure and function of the human body; general terminology and organization; cells and tissues; integumentary, muscular, skeletal, and nervous systems. Lab involves microscopy, the study of human anatomy via computer software and preserved specimens, and studies of physiological processes. [Does not fulfill any requirements for the Biology A.S. degree.]</strong></td>
<td>3 lecture/3 laboratory hours</td>
</tr>
<tr>
<td><strong>BIO 104  Anatomy and Physiology II</strong> 4 credits</td>
<td><strong>Prerequisite:</strong> BIO 103 with a minimum C grade or permission of course coordinator <strong>Continuation of BIO 103, covering digestive, circulatory, urinary, reproductive, respiratory, and endocrine systems. Lab includes cat dissection, human anatomy study via computer software, and quantitative studies of physiological processes. [Does not fulfill any requirements for the Biology A.S. degree.]</strong></td>
<td>3 lecture/3 laboratory hours</td>
</tr>
<tr>
<td><strong>BIO 106  Human Anatomy</strong> 4 credits</td>
<td><strong>Prerequisite:</strong> MAT 037 (or MAT 037A and 037B) <strong>Introduction to the human body with emphasis on terminology and body organization from the cellular level to organs systems. Topics include histology and skeletal, muscular, nervous, integumentary, digestive, respiratory, urinary, reproductive, circulatory and endocrine systems. (Designed for programs requiring a one-semester human anatomy course; does not satisfy requirements in biology or health programs.)</strong></td>
<td>3 lecture/2 laboratory hours</td>
</tr>
<tr>
<td><strong>BIO 113  Biological Science Concepts</strong> 3 credits</td>
<td><strong>Prerequisite:</strong> MAT 037 (or MAT 037A and 037B) <strong>Survey of fundamental concepts, principles, and phenomena in biology. Provides a solid scientific basis on which opinions relating to issues in biology can be developed. Topics include diversity of life, cell biology, inheritance, biotechnology, and body processes. Lab exercises employ the scientific method and reinforce lecture concepts. Designed for the non-science major or as a foundational course.</strong></td>
<td>2 lecture/2 laboratory hours</td>
</tr>
<tr>
<td><strong>BIO 114  Environmental Science Concepts</strong> 3 credits</td>
<td><strong>Prerequisite:</strong> ENG 024 or equivalent proficiency <strong>Exploration of the fundamental concepts of our local, regional, and global environment for the non-science major. Topics include aquatic and terrestrial ecosystems, biological and chemical principles relating to current environmental issues, basic ecological relationships which include plants and animals, ecological and technological concerns and advances as well as scientific analysis and solutions to current and future environmental problems.</strong></td>
<td>3 lecture hours</td>
</tr>
<tr>
<td><strong>BIO 115  Microbiological Science Concepts</strong> 3 credits</td>
<td><strong>Based on the Unseen Life on Earth series developed in conjunction with the American Society of Microbiology. Topics include microbial cell biology, biotechnological uses of microbes, and microbial evolution and ecosystems. Also explores the control of microorganisms and relationships between microbes and higher organisms. [Meets science and technology general education requirement.]</strong></td>
<td>3 lecture hours</td>
</tr>
<tr>
<td><strong>BIO 201  Microbiology</strong> 4 credits</td>
<td><strong>Prerequisite:</strong> BIO 101 or BIO 103 with a minimum C grade or permission of course coordinator <strong>Explores morphology, taxonomy, and metabolism of microbes with emphasis on fungi, protozoa, helminths, viruses and bacteria. Covers the role of microbes in nature, including biotechnology applications and medical importance; human defense mechanisms; and immunology. The lab develops techniques, reinforces certain lecture content, and introduces new material.</strong></td>
<td>3 lecture/3 laboratory hours</td>
</tr>
<tr>
<td><strong>BIO 202  Woody Plants</strong> 4 credits</td>
<td><strong>Prerequisite:</strong> BIO 101 or OHT 101 or permission of course coordinator <strong>Designed for ornamental horticulture, plant science, and biology majors. The lab consists of field studies stressing sight identification of both native and ornamental species. Covers the use of keys, as time permits. [Spring offering]</strong></td>
<td>3 lecture/3 laboratory hours</td>
</tr>
<tr>
<td><strong>BIO 203  Entomology</strong> 4 credits</td>
<td><strong>Prerequisite:</strong> BIO 101 or BIO 102 or permission of course coordinator <strong>Intensive survey of the orders of insects, covering comparative anatomy, life cycles, physiology and economic importance. Includes management, preservation and identification methods. [Fall offering]</strong></td>
<td>3 lecture/3 laboratory hours</td>
</tr>
<tr>
<td><strong>BIO 204  Ecology</strong> 4 credits</td>
<td><strong>Prerequisite:</strong> BIO 101 with a minimum C grade <strong>Corequisite:</strong> BIO 102 <strong>Fundamental concepts, theoretical principles, and practical applications of modern ecology: the study of the interactions of organisms with each other and their environment. Laboratory classes of this introductory course involve field work and research projects geared towards ecological application.</strong></td>
<td>3 lecture/3 laboratory hours</td>
</tr>
</tbody>
</table>
BUS—Business

BIO 208 Genetics 4 credits
Prerequisite: BIO 101 with a minimum C grade or permission of course coordinator
Explores gene activity at the molecular and organismal levels. Topics include inheritance, chromosome structure and function, gene mapping, genomics, prokaryotic and eukaryotic gene expression, molecular biology, and population genetics. Includes lab exercises in biotechnology, bioinformatics, and classical genetics. 3 lecture/3 laboratory hours

BIO 215 Principles of Microbiology 3 credits
Prerequisites: CHE 100 and BIO 103, BIO 104 or BIO 106
Designed for funeral education students, an introduction to the morphology, taxonomy, physiology, and control of microbes. Emphasizes those microbes which cause disease in humans and presents elements of organic chemistry and biochemistry. 3 lecture hours

BIO 217 Pathophysiology 3 credits
Prerequisites: RN licensure or BIO 103 and BIO 104 or permission of course coordinator
Study of the fundamental changes in body physiology due to disease. Covers the basics of cell biology, inflammation, mechanisms of body defense, specific body systems, and common disorders, with emphasis on disease processes, manifestations, and treatment. 3 lecture hours

BIO 293 Honors Research in Biology I 2 credits
Prerequisites: BIO 102 and CHE 102, minimum 3.0 GPA in biology and chemistry courses, and faculty approval
Under the guidance of an area sponsor in an industrial or academic environment, students participate in a biology research project. Requires a written and oral presentation to students and faculty. [Fulfills a technical elective requirement in the Biology and Chemistry program.] 3 laboratory hours per week

BIO 294 Honors Research in Biology II 2 credits
Prerequisite: BIO 293
Continuation of BIO 293 for students who are participating in a second semester of research at a cooperating academic or industrial laboratory. Requires a written report and oral presentation at the conclusion of the project period. [Fulfills a technical elective requirement in the Biology and Chemistry programs.] 6 laboratory hours per week

BIO 295 Honors Research in Biology III 2 credits
Prerequisite: BIO 294
Continuation of BIO 294 for students who are participating in a third semester of research at a cooperating academic or industrial laboratory. Requires a written report and oral presentation at the conclusion of the project period. [Fulfills a technical elective requirement in the Biology and Chemistry programs.] 6 laboratory hours per week

BIO 296 Honors Research in Biology IV 2 credits
Prerequisite: BIO 295
Continuation of BIO 295 for students who are participating in a fourth semester of research at a cooperating academic or industrial laboratory. Requires a written report and oral presentation at the conclusion of the project period. [Fulfills a technical elective requirement in the Biology and Chemistry programs.] 6 laboratory hours per week

BIO 295 Honors Research in Biology III 2 credits
Prerequisite: BIO 294
Continuation of BIO 294 for students who are participating in a third semester of research at a cooperating academic or industrial laboratory. Requires a written report and oral presentation at the conclusion of the project period. [Fulfills a technical elective requirement in the Biology and Chemistry programs.] 6 laboratory hours per week

BIO 296 Honors Research in Biology IV 2 credits
Prerequisite: BIO 295
Continuation of BIO 295 for students who are participating in a fourth semester of research at a cooperating academic or industrial laboratory. Requires a written report and oral presentation at the conclusion of the project period. [Fulfills a technical elective requirement in the Biology and Chemistry programs.] 6 laboratory hours per week

BUS 101 Introduction to Business 3 credits
Corequisite: ENG 101
Survey course of the American business system. Topics include forms of business ownership, financing, economic impacts, human resource management, marketing, management, accounting, the role of government, international issues, workplace ethics, legal concerns, and social responsibility. 3 lecture hours

BUS 102 Introduction to Sports Management 3 credits
Prerequisite: ENG 101
Examination of issues impacting the world of sports and management. Topics include the complexity of leadership, group dynamics, strategic and master planning, risk management, current social issues, Title IX and their effects on professional, intercollegiate, youth and other areas of sport. 3 lecture hours

BUS 103 Business Mathematics 3 credits
Prerequisite: proficiency in basic algebra
Emphasizes the application of mathematics to selected business topics and problems through use of a variety of mathematical concepts including linear equations and descriptive statistics. Topics include formulas and ratios, elementary statistics, percentages, simple interest and discount, and compound interest in addition to marketing and retail mathematics. 3 lecture hours

BUS 105 Communication Skills for Business 3 credits
Intense coverage of grammar, punctuation, and word usage skills. Emphasizes realistic application of current usage and style in today's work world. 3 lecture hours

BUS 107 Business Law I 3 credits
Foundation course dealing primarily with contracts: the making of contracts, contractual elements, contracts in action, discharge of contracts, and remedies. Orientation to the legal system includes examination of law history and purpose. Uniform Commercial Code applications are stressed. 3 lecture hours

BUS 108 Business Law II 3 credits
Prerequisite: BUS 107 with a minimum C grade
The law of agency and employment and labor-management relations. Regulation of business organizations: sole proprietorships, partnerships, and corporations. Addresses property law, bailments, personal property, intellectual property, real property, landlord-tenant relationships, wills, estates and trusts, and the evolving role/impact of the global business environment. 3 lecture hours

BUS 109 Personal Finance 3 credits
Prerequisite: MAT 108
Basics of budgeting, buying, income tax, investments, home ownership, and insurance along with emphasis on wills and trusts. 3 lecture hours

BUS 128 Team Building and Business Management 3 credits
Explores the value of teamwork in a total quality environment, both to identify and solve organizational problems. Analysis of various applications of teamwork within work units, departments, entire companies, as well as in customer and vendor relationships. Opportunities to practice team-building techniques in a simulated work group. 3 lecture hours
### COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 202</td>
<td>Customer Orientation</td>
<td>3</td>
<td>Explores the fundamentals of customer service, with focus on the “human” side of business and the importance of understanding and supporting those who depend on your business. Students develop core competencies necessary for providing excellent customer service, including an appreciation of diversity, developing loyalty, and dealing with customers.</td>
</tr>
<tr>
<td>BUS 205</td>
<td>Business Statistics I</td>
<td>3</td>
<td>Prerequisite: MAT 135 or MAT 140 with a minimum C grade. Emphasis on the application of statistical inference in business and economics, with attention to descriptive statistics, probability theory, sampling distribution and inference statistics. Additionally includes testing of hypotheses and confidence intervals.</td>
</tr>
<tr>
<td>BUS 206</td>
<td>Business Statistics II</td>
<td>3</td>
<td>Prerequisite: BUS 205 with a minimum C grade. Further testing of hypotheses and confidence intervals, plus coverage of regression analysis, chi-square, analysis of variance, and non-parametric measurements with use of several computer-based statistical packages.</td>
</tr>
<tr>
<td>BUS 209</td>
<td>Business Letter/Report Writing</td>
<td>3</td>
<td>Prerequisite: ENG 101 or equivalent background. Practical strategies for developing a clear writing style: organizing ideas, choosing effective words and composing concise paragraphs that make writing clear and persuasive. Includes letters of inquiry, claim, collection, and adjustment as well as resumes and cover letters. Requires oral and written business report.</td>
</tr>
<tr>
<td>BUS 210</td>
<td>Principles of Management</td>
<td>3</td>
<td>Prerequisite: ENG 101. Provides a framework for managing an organization, including discussion of the key management functions of planning, organizing, staffing, influencing and controlling, with emphasis on ethics and international management issues.</td>
</tr>
<tr>
<td>BUS 211</td>
<td>Funeral Service Internship I</td>
<td>2</td>
<td>Prerequisite: eligibility determined by Director of Funeral Service Programs and is limited to students who are registered as interns with the New Jersey State Board of Mortuary Science or student trainees with the Pennsylvania State Board of Funeral Directors. These sequential courses in the Funeral Service Preparatory program combine business cooperative education (75 percent) and professional work (25 percent) in a cooperating funeral home, where students work under the direction of a licensed funeral director for 16 hours each week. Courses are supervised by the Director of Funeral Service Programs, a field supervisor, and the sponsoring funeral director. <strong>16 work experience/1 seminar hour per week</strong></td>
</tr>
<tr>
<td>BUS 212</td>
<td>Funeral Service Internship II</td>
<td>2</td>
<td></td>
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<tr>
<td>BUS 213</td>
<td>Funeral Service Internship III</td>
<td>2</td>
<td></td>
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<tr>
<td>BUS 214</td>
<td>Funeral Service Internship IV</td>
<td>2</td>
<td>Prerequisite: eligibility determined by Director of Funeral Service Programs and is limited to students who are registered as interns with the New Jersey State Board of Mortuary Science or student trainees with the Pennsylvania State Board of Funeral Directors. These sequential courses in the Funeral Service Preparatory program combine business cooperative education (75 percent) and professional work (25 percent) in a cooperating funeral home, where students work under the direction of a licensed funeral director for 16 hours each week. Courses are supervised by the Director of Funeral Service Programs, a field supervisor, and the sponsoring funeral director. <strong>16 work experience/1 seminar hour per week</strong></td>
</tr>
<tr>
<td>BUS 218</td>
<td>Principles of Financial Management</td>
<td>3</td>
<td>Prerequisites: ACC 111; ECO 103 or ECO 111; BUS 205 or divisional permission. Principles of financial management as applied to the firm, including the role of the finance manager; analysis of financial statements and the firm's performance; raising capital in the financial markets; the financing mix; valuation of financial assets; long-term capital budgeting; working capital management; and international business finance. [occasional offering]</td>
</tr>
<tr>
<td>BUS 225</td>
<td>Employee Motivation and Leadership</td>
<td>3</td>
<td>Presents significant achievements in the study of leadership and work motivation, motivational and leadership methods and procedures, plus practical applications of research theory.</td>
</tr>
<tr>
<td>BUS 230</td>
<td>Global Environment of Business</td>
<td>3</td>
<td>Prerequisite: ENG 101. A survey course introducing the challenges confronting global business due to socio-political, economic, and cultural environments, including a discussion of ethics as it relates to these factors. Students are expected to read about topics such as political economy, cultural variation, trade theory, the international monetary system, foreign investment, and foreign exchange markets.</td>
</tr>
<tr>
<td>BUS 239</td>
<td>Entrepreneurship</td>
<td>3</td>
<td>Prerequisites: ACC 106 or ACC 111 or permission of instructor; ENG 101. Exposes students to the skills and resources necessary to become a successful entrepreneur. Topics include feasibility studies, cash management, business plans, pricing strategies, ethical issues, financing strategies, and financial statements.</td>
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<tr>
<td>BUS 240</td>
<td>Human Resource Management</td>
<td>3</td>
<td>Prerequisite: ENG 101. Examination of human resource management including determination of manpower requirements, the employment process, wage and salary administration, insurance, safety, discipline, and employee relations. Related topics include morale, research, and preparation for collective bargaining.</td>
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<tr>
<td>BUS 244</td>
<td>Introduction to Supply Chain Management</td>
<td>3</td>
<td>Prerequisites: ACC 106 or ACC 111; ACC 205 or ACC 112; ENG 101; IST 101, IST 102, or CIS 175; MAT 108 or advisor approved equivalent. A survey course designed to introduce students to the integrated activities of the supply chain, with emphasis on the flow of products, information, cash, and demand. Special topics include the global dimension, the role of technology, and strategic challenges.</td>
</tr>
<tr>
<td>BUS 262</td>
<td>International Dimensions of Management</td>
<td>3</td>
<td>Prerequisite: BUS 230. Study of how management activities in a global enterprise differ from those in a purely domestic company. Emphasis on cross-cultural interaction and its effects on planning, organizing, staffing and controlling the operations of a multinational company. [occasional offering]</td>
</tr>
<tr>
<td>BUS 273</td>
<td>Real Estate Investment</td>
<td>3</td>
<td>Prerequisite: BUS 276 or equivalent, or permission of instructor. Study of the changing nature of the real estate market from the perspective of the individual or corporate investor. Covers the government's role in investments, income tax features, mathematics of investments, feasibility studies, and all types of analyses. [occasional offering]</td>
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<td>COURSES</td>
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|-----------------
| **BUS 274** Real Estate Brokerage 6 credits  |
| **Prerequisite:** Real Estate license  |
| Review of property interests and rights, mortgages, leases, business opportunity sales, municipal and state regulations, law of agency. Also covers terminology, mortgage brokerage, real estate investments, zoning subdivision and development, tax appeals, appraisals and evaluations, urban renewal, management, civil rights law, license law, and real estate commission rules and regulations.  |
| 6 lecture hours  |

| **BUS 275** Introduction to Real Estate Appraisal 3 credits  |
| **Prerequisite:** Real Estate license  |
| Practical guide to real estate appraising covers basic principles, the mathematical and technical requirements of data collection, market data, and cost and income approaches to professional appraising. Utilizes both classical and modern methods of reporting. Students prepare several classroom appraisals as well as field projects.  |
| 5 lecture hours  |

| **BUS 276** Real Estate Principles 5 credits  |
| Meets the requirements of the New Jersey Real Estate Commission for salesperson licensing for residential, commercial, or industrial properties. Covers contracts, leasing, mortgages, property management, real estate valuation, the license act, and the laws of agency.  |
| 5 lecture hours  |

| **BUS 296** International Business Practice Firm 3 credits  |
| **Prerequisites:** sophomore standing and computer literacy  |
| International business model in a simulated business firm provides opportunity to perform business functions (purchasing, accounting, marketing, human resources, etc.) and transact business with other simulated companies throughout the world. Includes decision-making, critical thinking, and team activities.  |
| 1 lecture/5 laboratory hours  |

| **BUS 299** Business Cooperative Work Experience 3 credits  |
| **Prerequisites:** sophomore standing and permission of coordinator  |
| Integration of classroom study with specific planned periods of learning through job experience, designed for all business students. Seminars teach job-specific skills which can be practiced on the job. Course includes employer evaluation.  |
| 1 lecture/180 work experience hours  |

| **CHE—Chemistry** |

| **CHE 100** Introductory Chemistry 3 credits  |
| **Prerequisite:** proficiency in basic algebra  |
| Selected fundamental principles of general chemistry for students who have not had high school chemistry and for those who need a review before taking other chemistry courses. [Does not include laboratory instruction and does not fulfill any requirements in the Chemistry program.]  |
| 3 lecture hours  |

| **CHE 101** General Chemistry I 4 credits  |
| **Prerequisite:** MAT 135  |
| Corequisite: ENG 101  |
| Basic concepts and theoretical principles of modern chemistry. Topics include stoichiometry; atomic theory and the structure of matter; periodic table; chemical bonding; kinetic-molecular theory and the states of matter; gas laws; solutions; oxidation-reduction; and acid-base systems. Lab work introduces the use of computers for data collection and analysis.  |
| 2 lecture/1 recitation/3 laboratory hours  |

| **CHE 102** General Chemistry II 4 credits  |
| **Prerequisite:** CHE 101 with a minimum C grade or permission  |
| Corequisite: MAT 146 or approved equivalent  |
| Theoretical and practical aspects of kinetics; simple and ionic chemical equilibria; thermodynamics; spectrophotometry; electrochemistry; nuclear chemistry; and the major families of chemical elements with emphasis on the transition elements. Lab work includes qualitative cation and anion analysis plus additional computer applications for data collection and analysis.  |
| 2 lecture/1 recitation/3 laboratory hours  |

| **CHE 105** Agricultural Chemistry 3 credits  |
| **Corequisite:** MAT 037 (or MAT 037A and 037B) or proficiency in basic algebra  |
| Introductory course with emphasis on topics needed for an understanding of the basic chemistry of agriculture. [Fall offering]  |
| 2 lecture/3 laboratory hours  |

| **CHE 106** Chemical Science Concepts 3 credits  |
| **Prerequisite:** MAT 037 (or MAT 037A and 037B) or proficiency in basic algebra  |
| Corequisite: ENG 101  |
| Fundamental topics in chemistry and biology are introduced utilizing forensics to explore basic science concepts. Topics include general, organic, and biochemistry, and general and molecular biology. Lab experiments integrate case-study analyses and modern instrumentation with techniques in enzymology, chromatography, microscopy, fingerprinting, DNA analysis, and serology. Prepares the student for informed engagement in society by providing scientific knowledge on which attitudes and opinions can be developed.  |
| 2 lecture/2 laboratory hours  |

| **CHE 107** General and Physiological Chemistry 4 credits  |
| **Prerequisites:** high school chemistry or CHE 100; MAT 037 (or MAT 037A and 037B) or equivalent  |
| Introduction to basic chemical and physical principles and their applications to life processes. Lab exercises illustrate these principles and the behavior of physiologically significant materials.  |
| 2 lecture/1 recitation/2 laboratory hours  |

| **CHE 108** Computational Chemistry 1 credit  |
| **Prerequisite:** MAT 135  |
| Designed primarily for students interested in investigating the relationships between mathematics and science, combines the quantitative and analytical aspects of general chemistry. The analysis, interpretation, and presentation of experimental data are integral to the topics explored.  |
| 1 lecture hour  |

| **CHE 201** Organic Chemistry I 5 credits  |
| **Prerequisite:** CHE 102 with a minimum C grade  |
| Theoretical principles of reaction mechanisms and the synthesis of important classes of organic compounds. Topics include stereoisomerism; alcohols; ethers; nucleophilic substitution; elimination reactions; and instrumental methods. Lab work introduces the synthesis, purification, separation and identification of organic compounds.  |
| 3 lecture/4 laboratory hours  |
CHE 202 Organic Chemistry II 5 credits  
Prerequisite: CHE 201 with a minimum C grade  
Follows CHE 201 with increased emphasis on spectroscopy and mechanisms. Topics include aromatic compounds; electrophilic substitution reactions; carbonyl chemistry; carboxylic acid derivatives, amines, carbohydrates and proteins. Lab work includes methods of synthesis, purification, and spectroscopic identification of organic compounds.  
3 lecture/4 laboratory hours

CHE 205 Analytical Chemistry 4 credits  
Prerequisite: CHE 102 with a minimum C grade, MAT 146  
Theory and methods of quantitative chemical analysis including gravimetric, volumetric, and certain instrumental approaches. Topics considered include ionic equilibria, oxidation and reduction, precipitation and complex formation, and optical analysis techniques.  
3 lecture/4 laboratory hours

CHE 210 Instrumental Analysis 4 credits  
Prerequisites: MAT 146 or approved equivalent, CHE 102 with a minimum C grade  
Principles and application of some instrumental methods of chemical analysis including potentiometric titrations, conductance, electrodeposition, polarography, amperometric titrations, spectrophotometry, nuclear magnetic resonance, atomic absorption, and gas and liquid chromatography.  
3 lecture/3 laboratory hours

CHE 281 Cooperative Education—Chemical Laboratory Technology 3 credits  
Prerequisites: sophomore status, minimum 2.5 GPA, and permission of the chemistry coordinator  
Supervised work in a scientific research or testing laboratory, where students learn how the technician contributes to the overall project and how the project team collaborates to fulfill its objectives. Emphasizes the development of lab skills and safety procedures.  
1 lecture/180 work experience hours

CHE 272 Cooperative Education II 1 credit  
Prerequisite: CHE 281  
Continuation of CHE 281 with the exception that there will be no one-hour seminar each week and the student will earn one credit for a total of 90 hours of work for each course.

CHE 293 Honors Research in Chemistry I 2 credits  
Prerequisites: BIO 102 and CHE 102, minimum 3.0 GPA in biology and chemistry courses, and faculty approval  
Under the guidance of an area sponsor in an industrial or academic environment, students participate in a chemistry research project. Requires a written and oral presentation to students and faculty. [Fulfills a technical elective requirement in the Biology and Chemistry programs.]  
6 laboratory hours per week

CHE 294 Honors Research in Chemistry II 2 credits  
Prerequisite: CHE 293  
Under the guidance of an area sponsor in an industrial or academic environment, students participate in a chemistry research project. Requires a written report and oral presentation to students and faculty. [Fulfills a technical elective requirement in the Biology and Chemistry programs.]  
6 laboratory hours per week

CHE 295 Honors Research in Chemistry III 2 credits  
Prerequisite: CHE 294  
Continuation of CHE 294 for students who are participating in a third semester of research at a cooperating academic or industrial laboratory. Requires a written report and oral presentation at the conclusion of the project period. [Fulfills a technical elective requirement in the Biology and Chemistry programs.]  
6 laboratory hours per week

CHE 296 Honors Research in Chemistry IV 2 credits  
Prerequisite: CHE 295  
Continuation of CHE 295 for students who are participating in a fourth semester of research at a cooperating academic or industrial laboratory. Requires a written report and oral presentation at the conclusion of the project period. [Fulfills a technical elective requirement in the Biology and Chemistry programs.]  
6 laboratory hours per week

CHI—Chinese

Note: Students who have taken two or more years of a foreign language, and have done so in the last two years, should begin that language at the 200 level or switch to a new language. If there is doubt, placement will be determined by testing or consultation with the academic division.

CHI 101 Beginning Chinese I 3 credits  
The first in a sequence of courses designed for students with little or no prior knowledge of Mandarin Chinese. Spoken communication in Chinese is both the end goal and the means of instruction. Emphasizes the four communicative skills in a culturally authentic context. Reading and writing in both Pinyin and Chinese characters are assigned out of class to facilitate effective listening and speaking practice in class. Basic grammar skills are also introduced.  
3 lecture hours

CHI 102 Beginning Chinese II 3 credits  
Prerequisite: CHI 101 with a minimum C grade  
The second in a sequence of courses designed for students with little or no prior knowledge of Mandarin Chinese. Spoken communication in Chinese is both the end goal and the means of instruction. Emphasizes the four communicative skills in a culturally authentic context. Reading and writing in both Pinyin and Chinese characters are assigned out of class to facilitate effective listening and speaking practice in class. Basic grammar skills are also introduced.  
3 lecture hours

CHI 201 Intermediate Chinese I 3 credits  
Prerequisite: CHI 102 with a minimum C grade or permission of instructor  
The first in a sequence of courses designed for students with a mid to high novice level of competency in Mandarin Chinese. Spoken communication in Chinese continues to be the end goal and the means of instruction. The four communicative skills of reading, writing, listening and speaking are applied to discussions and debates involving Chinese culture, politics, and history. Fundamental grammar points are reviewed.  
3 lecture hours
CIS—Computer Information Systems

CIS 112 Introduction to PC Business Applications 3 credits
Prerequisite: OST 111 or equivalent proficiency
Students become proficient in use of Microsoft Office – including Word, Excel, Access, and PowerPoint – to complete practical business projects.

CIS 173 PC Applications: Database 3 credits
Prerequisite: IST 101 or equivalent proficiency
Students acquire a working knowledge of Access, a relational database, with emphasis on creating tables, queries, reports, and forms.

CIS 175 PC Applications: Spreadsheets 3 credits
Prerequisite: IST 101 or equivalent proficiency
Students acquire a working knowledge of Excel with emphasis on formulas, charts, and managing worksheets and lists.

CIS 182 PC Applications: Presentations 3 credits
Prerequisite: IST 101 or equivalent proficiency
Students use Microsoft PowerPoint software to create and customize presentations, including insertion of tables, flowcharts and organization charts. Students work with objects, lines, fills and colors, text manipulation, drawing techniques, animation and slide show effects.

CIS 280 PC Applications: Project Management 3 credits
Prerequisite: IST 209
Explores frequently used tools for project management. Addresses usage of a major software package to build project plans complete with tasks and resources, to format project reports, to track actual work against the plan, and to take corrective action when things get off track.

CIV—Civil Engineering Technology

CIV 101 Surveying I 3 credits
Corequisites: MAT 115 or MAT 110 or approved equivalent; ENT 116 or prior drafting experience; DRA 190
Introduces the three basic surveying tools – the tape, level, and transit/theodolite – along with proper field procedures for basic surveying. These include taking field notes, taping and EDM, leveling, bearings and azimuths, topography, and mapping – the latter including an introduction to computer-aided design.

CIV 102 Surveying II 3 credits
Prerequisite: CIV 101 or permission of instructor
Application of the fundamentals and techniques achieved in elementary surveying to solve additional problems in vertical curves, horizontal curves, traversing computations and profiles. Computations include bearings and azimuths, latitudes and departures, areas, and use of the planimeter. Applies AutoCAD and land development software, plus “Total Station” survey equipment for traversing, radial stakeout, and layout of horizontal curves.

CIV 103 Statics 3 credits
Prerequisites: MAT 146 with a minimum C grade; one semester of high school or college physics
Corequisite: MAT 151
Calculus-based introduction to the basic principles of engineering statics, including terminology and types of force systems, for engineering science students. Topics include the resultant force of a force system; distributed and concentrated forces; force systems in equilibrium, trusses, frames and machines; friction; centroids; and moments of inertia.

CIV 104 Applied Mechanics 3 credits
Prerequisite: MAT 110 or divisional permission
Introduction to the basic principles of engineering mechanics for study of applied technology. Topics include terminology, types of force systems, determination of the resultant force of force systems, analysis of coplanar force systems in equilibrium, centroids, and moments of inertia. [Spring offering]

CIV 106 Mechanics 3 credits
Prerequisites: MAT 115 or MAT 110 or divisional permission
Introduction to the basic principles of engineering mechanics, including terminology and types of force systems, for engineering technology students. Topics include the resultant force of a force system, distributed and concentrated forces, force systems in equilibrium, trusses, frames and machines, friction, centroids, and moments of inertia. [Spring offering]

CIV 216 Highway Engineering 3 credits
Prerequisites: MAT 115 and ENT 116
Corequisites: CIV 102, DRA 190, or divisional permission
Explores the planning, design, construction, and characteristics of highways and city streets, including layout, traffic requirements, safety and control, drainage, subgrade structure, base courses, and surface pavements. Problems to be solved include geometric design, traffic volume, channelization, and hydrology. Lab projects involve roadway designing. [Spring offering]

CIV 218 Evidence and Procedures for Boundary Location 3 credits
Prerequisites: CIV 101, CIV 102
Topics include evidence and procedures for boundary control, legal research techniques, writing legal descriptions, real estate law, and boundaries which include adjacent and riparian boundaries, with particular reference to New Jersey surveying history and state laws.

CIV 220 CAD Applications in Civil/Surveying Technology 3 credits
Prerequisite: CIV 102
Use of civil and surveying software within the AutoCAD drafting package. Projects involve topographic maps, areas and volumes of cross-sections, plan and profile of highways, subdivisions, digitizing, horizontal and special curve problems, coordinate computations in traversing, intersections and transformations.
CIV 223  Fluid Mechanics  4 credits  
Prerequisite: MAT 115
Introduction to the field of fluid mechanics. Topics include the properties of fluids, buoyancy, basic fluid power, closed pipe flow, open channel flow, forces due to fluids in motion, flow measuring devices, and the energy balances of fluid systems. Lab experiments (requiring written reports) on non-compressible fluids illustrate the theoretical concepts. [Fall offering]  
3 lecture/3 laboratory hours

CIV 224  Soil Mechanics  3 credits  
Prerequisite: MAT 115
Study of the characteristics and performance of soils: volumetry and gravimetry, moisture-density relations, consistency, identification and classification, ground water, capillary action, permeability, frost action, shear strength, stress distribution, earth pressure, and soil sampling and exploration. Individual and group reports are required for lab tests.  
2 lecture/3 laboratory hours

CIV 227  Structural Steel Design  3 credits  
Corequisite: CIV 229
Application of basic principles of material mechanics to the analysis and design of structural steel members that occur most commonly in bridge and building construction. Requires thorough knowledge of the American Institute of Steel Construction Code as well as orderly computational procedures. Lab work involves the design of a building. [Fall offering]  
2 lecture/3 laboratory hours

CIV 228  Reinforced Concrete Design  3 credits  
Prerequisite: CIV 227
Examines the design of basic reinforced concrete structural members including rectangular beams, slabs, columns, footings, and retaining walls. Requires thorough knowledge of the ACI Standard Code. Covers field inspection procedures. Lab projects involve designing, mixing, and evaluating concrete cylinders and beams, adhering to alternate design and strength design approaches. [Spring offering]  
2 lecture/3 laboratory hours

CIV 229  Mechanics of Materials  4 credits  
Prerequisite: CIV 106 with a minimum C grade
With an introduction to engineering materials and their mechanical properties, examines strains that occur in elastic bodies subjected to direct and combined stresses, shear and bending moment diagrams, deflections of beams, and stresses due to torsion. Lab testing involves various materials such as cast iron, steel, brass, aluminum, and wood to determine their physical properties and to demonstrate various testing techniques. [Fall offering]  
3 lecture/3 laboratory hours

CIV 230  Mechanics of Solids  4 credits  
Prerequisites: CIV 103 and MAT 151 with a minimum C grade
Calculus-based introduction to engineering materials and their mechanical properties, examining strains that occur in elastic bodies subjected to direct and combined stresses, shear and bending moment diagrams, deflections of beams, and stresses due to torsion. Lab testing involves various materials such as cast iron, steel, brass, aluminum, and wood to determine their physical properties and demonstrate various testing techniques.  
3 lecture/3 laboratory hours

CIV 237  Mechanics of Materials Fundamentals  4 credits  
Prerequisite: CIV 104 with a minimum C grade
Study of the fundamental concepts of stress and strain of elastic bodies when subjected to axial or bending loads. Analyzes shear and bending moment diagrams, considers compression members, and introduces principles of torsion. The lab introduces various testing procedures to determine the physical properties of such materials as steel, aluminum, brass, cast iron, and wood. [Fall offering]  
3 lecture/3 laboratory hours

CIV 281  Cooperative Education I – Civil Engineering Technology  2 credits
Relevant experiences to complement classroom instruction with practical on-the-job application of engineering practices in local industry for constructional/civil engineering students. Additional expenses for travel, clothing, and equipment may be incurred.  
1 lecture/90 work experience hours

CIV 282  Cooperative Education II – Civil Engineering Technology  1 credit
Continuation of CIV 281. Students may also enroll in CIV 281 concurrently.  
90 work experience hours

CMN—Communication

CMN 101  Mass Media  3 credits  
Corequisite: ENG 101
Survey of the growth and development of books, newspapers, magazines, film, radio, television, cable, the Internet, and new media delivery systems. Analysis of the mass media's impact on society and individuals, and whether the media effectively fulfill their functions as deliverers of information, persuasion, entertainment, and culture.  
3 lecture hours

CMN 102  Media Issues and Ethics  3 credits  
Prerequisite: ENG 101 with a minimum C grade
An examination of current issues and ethical dilemmas in mass media such as sensationalism, press censorship, violence, political coverage, rights of privacy, and photo manipulation. The implications of recent developments in mass media and current regulation of broadcast and cable media are discussed. Students read, evaluate and analyze media ethical case studies.  
3 lecture hours

CMN 107  Cinema  3 credits  
Corequisite: ENG 281 concurrently.
Survey of the growth and development of books, newspapers, magazines, film, radio, television, cable, the Internet, and new media delivery systems. Analysis of the mass media's impact on society and individuals, and whether the media effectively fulfill their functions as deliverers of information, persuasion, entertainment, and culture.  
3 lecture hours

CMN 111  Speech: Human Communication  3 credits  
Prerequisite: eligibility for placement in ENG 101
Exploration of the fundamental elements, characteristics, and processes of communication, including communicating in a multicultural society, interpersonal, intrapersonal, as well as small group contexts. Oral presentation experiences are heavily integrated throughout the course with a focus on public speaking design and delivery.  
3 lecture hours

CMN 112  Public Speaking  3 credits  
Prerequisite: eligibility for placement in ENG 101
Theory and practice of strategic, confident, and credible public speaking. Involves a variety of oral presentation experiences, including special occasion, personal experience, panel/group discussion, impromptu, informative and persuasive speaking. Focus on anxiety management, speech design, communication ethics, diverse audiences, and dynamic delivery.  
3 lecture hours

CMN 122  Organizational Communication  3 credits  
Prerequisite: ENG 101
Study of the knowledge, skills, sensitivity, and values associated with the variety of communications within and between organizations. An exploration of various methods, channels, and audiences of organizational communication in the corporate world.  
3 lecture hours
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<th>COURSES</th>
<th>Credits</th>
<th>Prerequisites</th>
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| CMN 125 Public Relations | 3 | ENG 101 with a minimum C grade  
Comprehensive study of public relations including identifying and reaching internal and external publics, dealing with print and electronic media, advertising, printing, direct mail, and preparing a public relations plan and budget. Also involves the writing of news releases, public service announcements, and advertising copy. [occasional offering] 3 lecture hours |
| CMN 131 Journalism I | 3 | ENG 101  
Introduction to the news media with particular emphasis on the newspaper and newswriting, the history of the press, and controversial issues facing the press. Active participation with the student paper, The College Voice, is integral. 3 lecture hours |
| CMN 141 Introduction to TV Production | 3 | CMN 141 with a minimum C grade  
Basic theory and operation of TV production equipment including camera, switcher, character generator, prompter, audio console, and lighting. Following study of studio procedure, students plan, produce, write, and direct several short video productions. 2 lecture/2 studio hours |
| CMN 142 Intermediate TV Production | 3 | CMN 141 with a minimum C grade  
Production of programming with complete formats such as news, interview, music, drama, and fashion. Students plan, produce, write, and direct 15-minute interview/demonstration programs. 2 lecture/2 studio hours |
| CMN 143 Graphics and Effects for Video | 3 | CMN 141 with a minimum C grade  
Corequisite: CMN 142  
Techniques for using graphics and visual effects to enhance video productions through the use of digital imaging and compositing software. A variety of multimedia production projects reinforces proper file management and image compression techniques. 2 lecture/2 laboratory hours |
| CMN 144 Screenwriting | 3 | ENG 101, ENG 102  
Aimed at the conception, planning and writing of screenplays. Through a series of writing exercises, scenes, short scripts and treatments, the student is expected to complete a 20-page short film script. The basics of character development, narrative, structure, texture, genre, and the ability to visualize in writing are explored. 2 lecture/2 laboratory hours |
| CMN 145 Acting/Directing for the Camera | 3 | ENG 101  
Corequisite: ENG 101  
Focuses on the application of acting and directing actors for single-camera film production. This hands-on course addresses the aesthetics, theory and practice of camera placement, shot execution, and the many aspects of directing the actor. 2 lecture/2 laboratory hours |
| CMN 146 Social Media Technologies | 3 |  
Extensive exploration of current social media technologies, utilizing the Mac platform, for storytelling and narrative purposes. With emphasis on usability, management and distribution, topics include multimedia development and design; the media elements of text, graphics, sound and video; and trends in emerging hardware and software. Multimedia projects demonstrate technical understanding and coherent narratives. 2 lecture/2 laboratory hours |
| CMN 151 Introduction to Radio | 3 | CMN 151 with a minimum C grade  
Corequisite: CMN 131  
Orientation to commercial radio in the United States. Topics include historical development, ownership, management, programming, music, sales, promotion, radio journalism, commercial copy writing, audience measurement, the ethics of broadcasting, and government regulation. Students learn the hands-on technical skills necessary to operate both analog and digital consoles and audio editing software. Production projects include newscasts, commercials, and music programs. 2 lecture/2 studio hours |
| CMN 153 Digital Audio Production I | 3 | CMN 151 with a minimum C grade  
Prerequisite: CMN 151 with a minimum C grade  
Students practice and develop audio production techniques used in broadcasting and other commercial applications. Theory of audio fundamentals combines with lab exploration of digital editing, digital multi-tracking, digital music creation, synchronizing audio with video. Students write and/or produce commercials, documentaries and short soundtracks for video and other entertainment venues. 3 lecture hours |
| CMN 161 Writing for Media | 3 | ENG 101  
Prerequisite: CMN 141 with a minimum C grade  
Overview of written formats commonly used in radio and television. Writing assignments include 30- and 60-second radio and television commercials, broadcast news copy, interviews, public service announcements, and dramatic teleplays. 3 lecture hours |
| CMN 214 Issues in Intercultural Communication in the U.S. | 3 | CMN 111 or CMN 112  
Inquiry into the forces of persuasion and propaganda as they exist in a technological society and how they influence beliefs, attitudes and actions. 3 lecture hours |
| CMN 211 Interpersonal Communication in Human Relations | 3 | CMN 111 or CMN 112  
Combining theory and practice, examines the nature and skills of interpersonal communication. Emphasizes the uniqueness of interpersonal communication as opposed to other forms of human communication. 3 lecture hours |
| CMN 212 Oral Interpretation | 3 | CMN 111 or CMN 112  
Corequisite: ENG 102  
Introduction to the process of illustrating the relationship between literature, interpreter, and audience through performance production. Students analyze, interpret and value the contextual, structural, historical and cultural intent of traditional and non-traditional literary forms and design a variety of related individual and collaborative performances. Additional focus on communicative competence, audience analysis, anxiety management tools, group work, constructive critique, and vocal variety technique. 3 lecture hours |
| CMN 215 Diversity and Global Perspective | 3 |  
Examines communication that bridges diverse cultures, values and realities. Explores racial, sexual, and class identities and the impact of privilege on the ability to relate to others. Develops effective communication skills for addressing obstacles to global citizenship. 3 lecture hours |
CMN 215 Communication and Gender 3 credits
Prerequisite: ENG 101 or equivalent English skills
Critically analyzes issues of gender and communication. Examines theoretical perspectives used to explain gender phenomena, gender socialization, male and female interactions and stereotypes, with an emphasis on improving communication skills.

CMN 231 Journalism II 3 credits
Prerequisite: ENG 101
Addresses the various kinds of newswriting (straight news, features, interpretative, editorial), editing, and the techniques of reporting (interviewing, surveys; coverage of events, meetings, speeches). Actual newspaper production aspects including layout, photojournalism, and graphics are experienced through practical work on the student paper. The College Voice.

CMN 241 Applied Field Production for Video 3 credits
Prerequisites: CMN 141, CMN 142, CMN 143 with a minimum C grade
Develops practical skills and knowledge of video production while executing a project for a community client in a professional atmosphere. Pre-production, production, and post-production activities center around the realities of client expectations, professional deadlines, and working together as one production unit. Advanced post-production techniques are implemented utilizing professional-level software and applications.

CMN 242 Advanced Film Production 3 credits
Prerequisites: CMN 141, CMN 142, CMN 143, CMN 241
Advanced television students enhance knowledge and skills while writing, editing, producing and marketing a short film or documentary. Students apply pre-production, production, and post-production skills with the goal of competing in a television program film festival.

CMN 243 Cinematography 3 credits
Prerequisites: CMN 141, CMN 142
Covers directing, lighting, and camera work through lecture and text materials. Includes an overview of cinematic production with attention to the art of lighting and cinematography. Additionally introduces steadicam camera technique, camera lens systems, cinema lighting techniques, and high-definition image acquisition.

CMN 250 Announcing for Radio and Electronic Media 3 credits
Prerequisite: CMN 151 with a minimum C grade or permission of course coordinator
Students explore, practice and develop announcing techniques used in broadcasting and other commercial applications. Practical assignments provide training for a variety of professional roles such as radio disc jockeys, broadcast journalists, voice-over announcers, and voice actors. Students produce commercials, public service announcements, interview programs, and corporate/industrial voice-overs and simulate the on-air sound of various radio station formats.

CMN 252 Applied Radio Programming and Production 3 credits
Prerequisites: CMN 153 and CMN 250 with a minimum C grade
Study of the development and nature of current radio formats, programming philosophies, and group ownership. Students analyze and critique current radio formats and create a commercially-viable format of their own. Students apply advanced production techniques to produce station “imagers,” format demos, and an audition CD suitable for entry-level positions.

CMN 253 Digital Audio Production II 3 credits
Prerequisite: CMN 153
An overview of multitrack recording techniques using state-of-the-art digital audio workstations. Topics include mastering techniques, digital signal processing, auto-tune, session management, and techniques for real-time and processed audio plug-ins including reverb, delay, sampling, automation, MIDI sequencing, and virtual instruments. Students produce multilayered recordings using live talent in a studio environment.

CMN 254 Live Sound Reinforcement 3 credits
Prerequisite: ETT 102 or permission of coordinator
Basic principles of the behavior of sound in various environments, with emphasis on signal flow, acoustics, sound reinforcement setups and installation, signal processing, as well as microphone selection and placement. Includes setting up sound systems and mixing live music. Topics include microphones, recording equipment, control consoles, reproduction techniques, amplification, distribution, loudspeaker systems, frequency response, decibels, and dynamic range.

CMN 255 Sound Design for the Entertainment Industry 3 credits
Prerequisites: CMN 153, CMN 254
Examines audio production techniques, technologies, and aesthetics related to the development of a compelling soundtrack for theatre, television, radio or the Internet. Through training in all phases of digital sound recording, editing and mixing, students work with location and field recording equipment and use advanced editing and mixing techniques associated with digital audio workstations.

CMN 260 Convergence Newsroom 3 credits
Prerequisite: CMN 131
A multimedia capstone course in convergence media. Students complete all elements of online and print news including writing a variety of journalistic articles, taking photographs, making and editing video footage, designing info graphics, learning the fundamentals of marketing and preparing all content for both online and print formats.

CMN 274 Radio/TV Management 3 credits
Prerequisites: CMN 101, CMN 141, CMN 151 with a minimum C grade
Study of the functions of middle and upper managers of radio, television, and cable operations. As individuals and as members of a management team, students solve case studies of typical problems faced by general managers, program directors, news directors, promotions directors, and sales managers in broadcast and cable companies. [Spring offering]
CMN 285 Special Studies in Television Production 3 credits
Prerequisites: CMN 242, CMN 290, minimum 3.0 GPA, and divisional permission
Opportunity for students who have completed all regular television writing and production courses to continue their studies at an advanced level. Individual students and faculty develop a project contract that sets forth objectives, standards of quality, evaluation guidelines, and deadlines. [Occasional offering]

CMN 286 Special Studies in Radio Production 3 credits
Prerequisites: CMN 161, CMN 252, minimum 3.0 GPA, and divisional permission
Opportunity for students who have completed all regular radio writing and production courses to continue their studies at an advanced level. Individual students and faculty develop a project contract that sets forth objectives, standards of quality, evaluation guidelines, and deadlines. [Occasional offering]

CMN 287 Special Studies in Communication 3 credits
Prerequisites: second-year standing as a Communication program major at MCC and permission of the program coordinator; minimum 3.0 GPA
Opportunity for students who have completed all regular communication and communication writing courses to continue their studies at an advanced level. Individual students and faculty develop a project contract that sets forth objectives, standards of quality, evaluation guidelines, and deadlines.

CMN 290 Internship: Communications 3 credits
Prerequisites: second-year standing and coordinator approval
Work experience at a radio station, TV station, cable system, industrial or instructional TV facility, or other allied business. 1 lecture/180 work experience hours

CMN 294 Summer Film Program 3 credits
Advanced film students, working within teams of six, write, produce and edit a short film. Students apply pre-production, production, and post-production skills with the goal of competing in local film festivals. 2 lecture/2 laboratory hours

COL—College Success
See also ASK—Academic Skills. Applicability of these credits toward degree requirements is limited. Consult an academic advisor.

COL 100 Strategies for Academic Success 3 credits
Develops the skills necessary for academic success in college. Lecture topics are reinforced during computer laboratory hours, with attention to critical thinking, information literacy, communication, and technology skills woven throughout. Designed primarily for first semester students but open to all. 3 lecture hours

COS—Computer Science

COS 101 Introduction to Computer Science 4 credits
Prerequisite: MAT 037 (or MAT 037A and 037B) or proficiency in basic algebra
Introduces both majors and non-majors to programming and to the concepts and topics of computer science, including computer architecture, algorithm analysis, operating systems, and programming languages. Students develop algorithmic thinking and abstraction through program design and language structures using a 3-D animation programming language. 3 lecture/2 laboratory hours

COS 102 Computer Science I—Algorithms and Programming 4 credits
Prerequisite: COS 101, IST 107, IST 108, IST 109, or IST 123
Corequisite: MAT 146 or higher
Algorithm design and object oriented programming in the Java language. Topics include data representation, input/output, control structures, exception handling, classes, methods, inheritance, polymorphism, encapsulation, overloading and dynamic memory. 3 lecture/2 laboratory hours

COS 204 Discrete Mathematical Structures 4 credits
Prerequisite: MAT 151 or equivalent
Primarily intended for Computer Science majors, covers wide variety of topics serving as the mathematical framework for the design and analysis of algorithms. Topics include induction and recursion, relations, functions, sets, propositional logic, Boolean algebra, grammars, permutations and combinations, and finite state machines. [Spring offering] 3 lecture/2 laboratory hours

COS 210 Computer Science II—Data Structures 4 credits
Prerequisite: COS 102 or equivalent
Study of advanced programming topics focused on logical structures of data as well as the design, implementation and analysis of algorithms operating on these structures. Topics include linked lists, stacks, trees, queues, graphs and analysis of efficiency. Also covers searching, sorting and hashing techniques. [Spring offering] 3 lecture/2 laboratory hours

COS 231 Fundamentals of Computer Architecture 4 credits
Prerequisite: COS 102 or equivalent
Explores the levels of organization in digital computers: logic circuit design, integrated circuits, and assembly language coding. 3 lecture/2 laboratory hours

CRJ—Criminal Justice

CRJ 101 Introduction to the Criminal Justice System 3 credits
Overview of the systems of criminal justice in the United States, including a survey of the agencies for the administration of justice and the relationships among them. 3 lecture hours

CRJ 102 Police in the Community 3 credits
Study of the relationship between the police and the public they serve with particular emphasis on ethical standards, human relations, civil rights, and community service. 3 lecture hours

CRJ 103 Introduction to Corrections 3 credits
Study of the relationship between the correction officer and the prisoner including the history of corrections, the rights of the confined, parole and work release, and the philosophies of rehabilitation and punishment. 3 lecture hours

CRJ 104 Introduction to Security 3 credits
Introduction to the historical, philosophical, and legal bases of the security field. Examines all aspects of private security systems and functions, including the technology of security and the role of security in different organizational settings. [Occasional offering] 3 lecture hours

CRJ 105 Criminology 3 credits
In-depth analysis and evaluation of criminal behavior including street crime, organized crime, and occupational crime. Students learn to investigate, categorize, and describe the theories of criminality and social control. 3 lecture hours
CRJ 202 Criminal Law 3 credits
Examines the evolution and development of criminal laws as well as the nature of crime, basic principles of criminal law, plus defenses and court presentations. 3 lecture hours

CRJ 206 Police Administration 3 credits
Examines the contemporary law enforcement agency and its functions, structure, and operational techniques; implications of generalized and specialized units; development of resources by time and area of function; analysis of line, staff, and auxiliary functions; and current issues facing today’s police agencies. 3 lecture hours

CRJ 207 Criminal Investigation 3 credits
The strategies, techniques, and methods employed in criminal investigations – at the crime scene, follow-up investigation, modus operandi, sources of information, and interrogation. 3 lecture hours

CRJ 211 Community Corrections 3 credits
Examines the major types of community-based correctional alternatives such as fines, community service, drug courts, probation, day reporting centers, halfway houses, parole, and other intermediate sanctions. Covers correctional law and management, controversies, political pressures, and emerging trends. 3 lecture hours

CRJ 212 Juvenile Justice 3 credits
Overview of the major issues in the field of juvenile justice, including causes of delinquency and the development of modern treatment methods. Emphasis on the delinquent’s relationships with family, school, peers, and the juvenile justice system. 3 lecture hours

CRJ 299 Cooperative Education – Criminal Justice 3 credits
Prerequisites: sophomore status; CRJ 101; CRJ 206 or CRJ 103; divisional permission
Exposure to the philosophy, goals, and daily operations of a criminal justice agency. Through supervised work, the student experiences the roles of criminal justice employees and evaluates their responsibilities. Designed for the student interested in the realistic application of criminal justice theory to the justice system. 1 lecture/180 work experience hours

DAN—Dance

PRIMED Humanities / Diversity and Global Perspective

DAN 101 Introduction to Dance and Culture 3 credits
Prerequisite: ENG 101 or permission of instructor
Introductory study of dance as an art form, investigating the impact of gender, politics, religion, and culture on how dance is perceived. Develops a fuller appreciation of how dance has been used over the course of human history in western and non-western cultures to communicate human needs and to express what words cannot communicate. [Fall and Spring offering] 3 lecture hours

DAN 102 Ballet I 2 credits
Introduces traditional or classic ballet terminology, forms, and techniques. Emphasizes body alignment and physical skill needed for proper classical ballet movements. [Spring offering] 3 studio hours

DAN 103 Modern Dance I 2 credits
Introduces the techniques and motor skills of modern dance, including basic body skills, placement, alignment, and continuity. [Fall offering] 3 studio hours

DAN 105 Jazz Dance I 2 credits
Fundamentals of jazz dance techniques with emphasis on syncopated rhythms and isolations of the body. [Fall and Spring offering] 3 lecture hours

DAN 112 Ballet II 2 credits
Prerequisite: DAN 102 or permission of instructor
Study of ballet technique on an intermediate level. [Spring offering] 3 studio hours

DAN 113 Modern Dance II 2 credits
Prerequisite: DAN 103
Study of modern dance techniques on an intermediate level, and an introduction to repertory. [Fall offering] 3 studio hours

DAN 115 Jazz Dance II 2 credits
Prerequisite: DAN 105 or permission of instructor
Study of jazz dance techniques on an intermediate level, with emphasis on syncopated rhythms and isolations of the body. [Fall and Spring offering] 3 studio hours

DAN 116 Studio Dance Technique I 3 credits
A sequence of courses required of all students in the dance program, provides an intensive approach to skill development, discipline, and knowledge for mastery of the three concert dance styles: ballet, jazz, and modern. Daily technique classes cater to specific needs and abilities. Related issues of career planning, personal health, and ensemble work are also addressed. [Fall and Spring offering] 6 studio hours

DAN 117 Studio Dance Technique II 3 credits
Prerequisite: DAN 116

DAN 118 Studio Dance Technique III 3 credits
Prerequisites: DAN 116, DAN 117

DAN 119 Studio Dance Technique IV 3 credits
Prerequisites: DAN 116, DAN 117, DAN 118

DAN 120 Choreography I 3 credits
Prerequisite: DAN 116 or divisional permission
Introduces several choreographic strategies used to develop an idea into a dance structured for the stage. Students are exposed to the tools of choreography beginning with basics – time, space, and force – and then move on to more complex issues faced by intermediate choreographers: form, style, abstraction, compositional structures, and choreographic devices. [Spring offering] 2 lecture/2 studio hours

DAN 285 Special Studies in Dance 3 credits
Prerequisites: DAN 101, DAN 116, DAN 117, DAN 120 and permission of program coordinator
Opportunity for students who have completed regular course offerings to continue their studies at an advanced level. Individual students and faculty develop a project contract that sets forth objectives, standards of quality, evaluation guidelines, and deadlines. [Fall offering] 6 studio hours

DMA—Digital Media Arts

DAN 105 Introduction to Computer Art 3 credits
Introduction to the use of the computer as an art and design tool. Emphasizes fundamental color computer graphics skills through practical experience with two-dimensional drawing, timeline, image editing, and 3D spatial programs currently used by art and design professionals. Hardware used includes Macintosh or PC computers, scanners, and black-and-white and color printers. 1 lecture/4 studio hours
DMA 110 Digital Imaging I 3 credits
Designed to meet the needs of artists and designers in diverse fields, involves the leading professional paint and photo retouching software. Addresses the practical and creative aspects of producing art and illustrations and manipulating photographs and other images through a series of hands-on assignments. 1 lecture/4 laboratory hours

DMA 120 3-D Modeling I 3 credits
Develops visual problem-solving abilities using computers as art and design tools. Students create and manipulate three-dimensional forms and scenes, their colors, surface textures, lighting and cameras to design effective compositions in virtual 3-D space. Useful for graphic arts, communications, interior design and architectural professions, prepares students for Animation I and 3-D Modeling II. Windows-based PC computers, scanners, and current professional software are used. 1 lecture/4 laboratory hours

DMA 125 Pre-Production Design 3 credits
Prerequisites: ART 102, ART 105, and DMA 105 with minimum C grades or divisional permission Corequisite or Prerequisite: ART 104 Pre-production planning and design for animation and interactive media. Without use of computers, students learn to apply creative thinking, design principles and production processes essential to the creation of successful animations and multimedia programs. Practical experience in concept generation, concept drawing, storyboarding, and project organization. 1 lecture/4 studio hours

DMA 135 Digital Narrative 3 credits
Prerequisite: DMA 105 Exploration of narrative art, its structure and approaches as it applies to time-based graphics. Students investigate narrative in a variety of formats – from comics to animation to film editing and various "artistic" permutations in between – with emphasis on current digital practices. 1 lecture/4 studio hours

DMA 140 Interactive Web Animation 3 credits
Prerequisite: basic computer literacy Introduction to two-dimensional animation using the professional software application Flash to create short animations for the Web or television and simple Web games and interfaces. Specific instruction includes how to draw and animate vector graphics, import audio, create buttons and symbols, and use Actionscripting to create nonlinear interactivity and animation. 1 lecture/4 studio hours

DMA 144 Internet Tools and Techniques 3 credits
Introduction to the tools and techniques used to create blogs, commercial websites and Internet applications. Topics include the history of the Internet, Internet software and hardware, ethical issues surrounding privacy, accessibility and ownership on the Internet, information architecture and content strategies, and the tools used for blogging, creating web pages and rich web applications. Students research, analyze, diagram, and create Internet applications and websites. 1 lecture/4 studio hours

DMA 145 Web Design I 3 credits
Introduction to Web design using a professional software application. Focuses on principles of design and interactivity. Students learn how to create images for the Web, manage files, organize imagery using tables, style text using cascading style sheets, create animated gifs, and add interactivity using basic JavaScript behaviors. 1 lecture/4 studio hours

DMA 210 Motion Graphics 3 credits
Prerequisite: CMN 141 or DMA 135 with a minimum C grade or divisional permission Digital art in motion: concepts and techniques of visual storytelling emphasizing issues of pacing, continuity and dramatic structure. 2-D graphics, video and sound are combined using new media tools to explore the possibilities of new media art. Course content is applicable to the fields of 3-D animation, film and television title sequences, commercials, multimedia design and music videos. [Spring offering] 1 lecture/4 studio hours

DMA 220 3-D Modeling II 3 credits
Prerequisite: DMA 120 with a minimum C grade or divisional permission Covers advanced concepts and materials of 3-D modeling and virtual scene creation for those who wish to explore 3-D modeling and illustration in depth. Topics include environment creation, 3-D paint, modeling for games, character models, modeling with nurbs/patches and compositing. [Fall offering] 1 lecture/4 studio hours

DMA 224 Rigging for Animation and Games 3 credits
Prerequisite: DMA 120 with a minimum C grade Corequisite: DMA 225 Character rigging and design techniques for gaming, broadcast and feature film industries. Topics include node-based hierarchies, forward and inverse kinematics, constraints, user interfaces, skinning, and melscripting. Utilizing both PC and Mac computers with professional digital content creation software, students design and construct armatures for different object types. 1 lecture/4 studio hours

DMA 225 Computer Animation I 3 credits
Prerequisites: DMA 120 and DMA 135 with a minimum C grade or divisional permission Using 3-D animation software and video interface, students produce special effects and character animations from storyboard to output. Windows-based personal computers and current professional software are used. [Fall offering] 1 lecture/4 studio hours

DMA 226 Computer Animation II 3 credits
Prerequisite: DMA 225 with a minimum C grade Advanced 3-D character animation and special effects involving character animation, inverse kinematics, and particle systems. Students produce a recording of their work and develop presentation skills. Windows-based personal computers and current professional software are used. [Spring offering] 1 lecture/4 studio hours

DMA 245 Web Design II 3 credits
Prerequisite: DMA 145 with a minimum C grade or divisional permission Intermediate skills in Web design using a professional software application. Focuses on principles of organization, interface design and usability. Students learn how to create a site map, design navigational systems, integrate Flash and video content, batch process images, create templates, insert forms, design pages using XHTML cascading style sheets, and add advanced interactivity using JavaScript. 1 lecture/4 studio hours

DMA 247 Pre-Production Design 3 credits
Corequisite or Prerequisite: DMA 225 Pre-production planning and design for animation and interactive media. Without use of computers, students learn to apply creative thinking, design principles and production processes essential to the creation of successful animations and multimedia programs. Practical experience in concept generation, concept drawing, storyboarding, and project organization. 1 lecture/4 studio hours

DMA 251 Digital Narrative 3 credits
Prerequisite: DMA 105 Exploration of narrative art, its structure and approaches as it applies to time-based graphics. Students investigate narrative in a variety of formats – from comics to animation to film editing and various "artistic" permutations in between – with emphasis on current digital practices. 1 lecture/4 studio hours

DMA 254 3-D Modeling III 3 credits
Prerequisite: DMA 120 with a minimum C grade or divisional permission Covers advanced concepts and materials of 3-D modeling and virtual scene creation for those who wish to explore 3-D modeling and illustration in depth. Topics include environment creation, 3-D paint, modeling for games, character models, modeling with nurbs/patches and compositing. [Fall offering] 1 lecture/4 studio hours
DRA 246  Web Design III: Advanced Project 3 credits
Prerequisites: DMA 245 and DMA 110
with a minimum C grade or divisional permission
Develops practical skills and knowledge of Web design while executing a project for a community client in a professional atmosphere. Visual design, information architecture, and Web production are all based on client goals, messages, and deadlines outlined during the project definition phase. Advanced Web design techniques are implemented utilizing professional-level software and applications. [Spring offering] 1 lecture/4 studio hours

DRA 247  Web Application Development 3 credits
Prerequisite: DMA 245
Builds upon previous Web development knowledge by introducing concepts of server-side programming and database integration. Emphasizes use of server space and client-side processing to enhance the collation and delivery of information to the viewer. Programming languages covered include PHP, MySQL and JavaScript (jQuery library). 1 lecture/4 studio hours

DRA 250  Digital Portfolio Seminar 3 credits
Prerequisite: DMA 245 or DMA 211 or DMA 225 or PHO 203 or CMN 241 or CMN 250 with a minimum C grade or divisional permission
Introduction to the culture, technologies, history, and theories of new media. Advanced digital media arts students explore topics in digital media while developing a digital portfolio to present their work. 1 lecture/4 studio hours

DMA 275  Interdisciplinary Studio 3 credits
Prerequisites: ART 105, DMA 105
with a minimum C grade or divisional permission
Students explore the possibilities and implications of combining digital and traditional tools and techniques in the service of personal expression as fine art. Focuses on exploring each individual’s aesthetic expression and the development of individual style. A variety of techniques, software, and theoretical issues are presented. Students are expected to create a series of pieces for exhibition, with emphasis on the printed output. [Occasional offering] 1 lecture/4 studio hours

DMA 285  Special Studies in Digital Media Arts 3 credits
Prerequisites: DMA 226 or DMA 245 and divisional permission
Special courses in specific art forms allow students who have completed regular course offerings to continue their studies at advanced levels. Individual students and faculty develop a project contract that sets forth objectives, standards of quality, evaluation guidelines, and deadlines. [Occasional offering] 1 lecture/4 studio hours

DMA 290  Digital Media Arts Internship 3 credits
Prerequisite: coordinator approval
Work experience at participating animation studios, advertising agencies, design firms, and film and video effects houses. 1 lecture/180 work experience hours

DRA—Drafting / Computer-Aided Design

DRA 132  Architectural Computer Drafting 3 credits
Prerequisites: BCT 110, BCT 120, DMA 190 or divisional permission
Using architectural software, students produce professional drawings; compile contract documents; and date, store and retrieve information on both two- and three-dimensional projects. Involves creation of walls, doors, windows and roofs as well as implementation of symbols for structural, electrical, mechanical, plumbing, furnishing, and site work. 2 lecture/2 laboratory hours

DRA 190  Introduction to Computer-Aided Drafting 2 credits
Introduction to the use of the computer as a drafting tool. Includes concepts, terminology, and basic commands necessary to prepare drawings using CAD software. Requires basic knowledge of the computer keyboard. 1 lecture/2 laboratory hours

DRA 191  Introduction to Building Information Modeling 2 credits
Introduction to the use of the computer using building information modeling software. Topics include basic terminology and concepts of modeling, geometry, and the basic commands necessary to prepare a building model and several drawings. 1 lecture/2 laboratory hours

DRA 216  Heating, Refrigeration and Air Conditioning Drafting 3 credits
Prerequisites: ENT 116 or permission of instructor, HRA 102
Study of the aspects of drawing needed by a drafter in order to prepare finished drawings for the installation of heating, refrigeration, and air conditioning systems. Intended primarily for students in the Heating, Refrigeration and Air Conditioning program. [Occasional offering] 1 lecture/4 laboratory hours

DRA 217  Structural Steel Design and Drafting 3 credits
Prerequisites: ABT 120, DMA 190
Corequisite: CIV 237
Examines the problems common to structural design of steel and similar materials relative to the architectural frame of a structure. Relies heavily on the principles of mechanics and mechanics of materials fundamentals. Requires familiarity with general steel design codes and the preparation of structural drawings. 2 lecture/3 laboratory hours

DRA 238  Advanced Computer-Aided Design 3 credits
Prerequisite: DMA 246
Advanced computer drafting course using CAD software. Includes a review of basic command options, display options, hatching and sectioning, text, and dimensioning. Introduces 3-D drawing and surface modeling. 2 lecture/2 laboratory hours

DRA 248  Advanced Building Information Modeling 3 credits
Prerequisite: DMA 191 with a minimum C grade
Advanced computer-aided design and drafting using BIM software. Students build intelligent 3-D models of designs using parametric, feature-based modeling software. After refinement, 2-D drawings are created from the 3-D model. 2 lecture/2 laboratory hours

DRA 251  Solids Modeling 3 credits
Prerequisite: DMA 238 with a minimum C grade
An introduction to solids modeling and rendering software. Students explore the capabilities and potentials of computer software used to construct solids models then render the resulting image. 2 lecture/2 laboratory hours

ECO—Economics

ECO 103  Basic Economics 3 credits
Prerequisites: ENG 101 and MAT 037 (or MAT 037A and 037B) with a minimum C grade or placement in college-level mathematics
Basic economics concepts enable students to better understand, analyze, and discuss current economic events and problems. Includes demand, supply and prices; measures of gross domestic product; the circular flow of income; market structures; government fiscal policy; monetary policy; the national banking system; and international trade. 3 lecture hours
EDU—Education

EDU 102 Introduction to Exceptional Children 3 credits
Introduction to the field of special education and to exceptionality. Inclusion, an approach to teaching students with special needs in general education, is emphasized. Topics include historical overview, legislation, consideration of specific disabilities, instructional techniques and equipment, as well as teaching gifted students and non-native speakers. 

Introduction to American education and the teaching/learning process for future educators. Topics include history and philosophy of education, curriculum, teaching strategies, school law, diversity, technology and recent trends. Students are involved in creative activities, research, and analysis of current literature. Requires 25 hours of field observation in an educational setting. 

EDU 120 Introduction to Early Childhood Education 3 credits
Emphasizes the needs of young children in conjunction with appropriate care and educational programs. Topics include environment, developmentally appropriate practices, emerging literacy, cognitive development, learning through play, and school/home relationships. Observation and/or participation in a childcare setting are required. 

EDU 130 Infant/Toddler Social and Emotional Well-Being 3 credits
Designed for students interested in a career in a childcare or nursery school environment. A component of the New Jersey Infant/Toddler Credential, the course supports practitioners working with infants and toddlers to strengthen their capacity as caregivers of the very young. 

EDU 131 Supervised Field Experience in Infant/Toddler Settings 3 credits
Prerequisite or Corequisite: EDU 130
A companion course to EDU 130, designed for students interested in a career in a childcare or nursery school environment. Student field experiences critically evaluated by both students and teachers serve as a forum for discussion. A component of the New Jersey Infant/Toddler Credential, the course supports practitioners working with infants and toddlers to strengthen their capacity as caregivers of the very young. 

EDU 210 Education Field Experience 6 credits
Prerequisites: minimum C grade in EDU 109 and SOC 104, or minimum C grade in EDU 102 and EDU 201, and divisional permission
Corequisite: EDU 211
Internship of 15-20 hours per week in a New Jersey school approved by the coordinator of the Education / Special Education Assistant program. The student performs the duties of an education assistant under the supervision of cooperating teachers. Assignments to schools are made on the basis of the student's interests and occupational goals; arrangements must be made during the preceding semester. [Spring offering] 4 days per week

EDU 211 Education Seminar 3 credits
Prerequisites: minimum C grade in EDU 109 and SOC 104, or minimum C grade in EDU 102 and EDU 201, or divisional permission
Corequisite: EDU 210
Examines the correlation between educational theory and practice. Students engage in research with professional journals, demonstration classes illustrating varied methods and materials, teaching units, and observation visits to area schools. [Spring offering] 

EDU 214 Curriculum and Methods for Early Childhood 3 credits
Prerequisite: EDU 120
Exposes students to a variety of methods for the planning and implementation of quality instruction in an early childhood setting. Students study strategies for creating positive learning environments while developing curricula for various subjects and learning styles. 

EET—Electronics Engineering Technology

EET 130 Fundamentals of Electronics 3 credits
Prerequisite or Corequisite: MAT 037 (or MAT 037A and 037B)
Introduction to DC and AC circuits, electromagnetic devices, electronic components, and analog and digital circuits. For non-electronics majors. 

EET 138 Introduction to Electronics I 4 credits
Prerequisite or Corequisite: MAT 135
Focuses on direct current (DC) devices and circuits. Progresses from the fundamentals of electricity, Ohm's Law, Kirchoff's Law, series and parallel circuits to the study of resistors, capacitors, inductors, batteries, transistors, and diodes as they pertain to DC circuits.
EET 139  Introduction to Electronics II  4 credits
**Prerequisite:** EET 138 or equivalent
Continuation of EET 138. Covers the basics of AC circuits and devices including resistors, capacitors, inductors, and semiconductors. Introduces fundamental waveforms such as sine waves and pulses and their behavior in solid state circuits.  

**3 lecture/3 laboratory hours**

EET 140  Electronic Construction  2 credits
**Prerequisite or Corequisite:** EET 130 or EET 138
Teaches the use of hand tools, drilling and other metalworking methods as well as correct soldering and repair techniques. Students apply these skills to chassis construction and wiring, and also gain experience in working with printed circuit boards.  

**1 lecture/3 laboratory hours**

EET 214  Communications Electronics  4 credits
**Prerequisite:** EET 219
Study of information transmission and reception involving both digital and analog systems. Topics include AM, FM, noise, spectra, receivers, transmitters, lines and cables, and antennas.  

**3 lecture/3 laboratory hours**

EET 215  Fiber Optics  4 credits
**Prerequisites:** EET 130 or EET 138; MAT 135 or equivalent
A study of fiber optics as it pertains to the communications process. Topics include the physics and behavior of light in a fiber. Skills learned include connectorization of fiber and the use of the special tools and test equipment required. Successful completion of this course can lead to FOA certification.  

**3 lecture/2 laboratory hours**

EET 219  Electronic Networks  4 credits
**Prerequisite:** EET 139
Analysis and design considerations for electronic circuits, including power supplies using semiconductor diodes and zener diodes, and Class A amplifiers using bipolar and FET transistors.  

**3 lecture/3 laboratory hours**

EET 230  Linear Integrated Circuits  4 credits
**Prerequisite:** EET 219
Covers the basic building blocks of linear systems, such as inverting and non-inverting amplifiers, comparators, and filters.  

**3 lecture/3 laboratory hours**

EET 251  Digital Circuit Fundamentals  4 credits
**Prerequisite:** EET 139
Introduces the basic theory, concepts and devices behind digital circuitry and computers, including gates, registers, flip-flops, counters, decoders and encoders, half- and full-adders, and clocks. The electrical characteristics, limitations, and connections of digital integrated circuit packages are explored. Corresponding labs reinforce lecture materials through practical examples.  

**3 lecture/3 laboratory hours**

EET 263  Digital Technology – Introduction to Microprocessors and Assembly Language  4 credits
**Prerequisite:** EET 251
Introduces the operation of a simple computer at the physical (electrical) level using gates, registers, and other basic circuits introduced in the prerequisite course. Students gain experience building and programming a simple computer. Covers memory, basic microprocessor architecture, assembly language programming, and analog-to-digital as well as digital-to-analog converters.  

**3 lecture/3 laboratory hours**

**ENG—English**

*Note: Initial selection of an English composition course is determined by results of college skills placement testing (see page 8). Applicability of credits for courses below the 100 level toward degree requirements is limited. Consult an academic advisor.*

**ENG 023  Introduction to College Composition I  4 credits**
First-level developmental course designed to help students write 400- to 650-word essays about concepts in various academic disciplines. Students are guided in developing a writing process that improves essay development, coherence, grammar, and punctuation. Prepares students for Introduction to College Composition II, a second-level foundation course.  

**4 lecture hours**

**ENG 024  Introduction to College Composition II  4 credits**
**Prerequisite:** placement test
Second-level developmental course. Students write 400- to 750 word essays about concepts in various academic disciplines. Focus is on developing a writing process that helps student writers to form positions and analyze and evaluate their own and other writers’ ideas. Students also improve their sentence and essay structure, tone, and overall coherence.  

**4 lecture hours**

**ENG 033  Introduction to College Reading I  4 credits**
**Prerequisite:** placement test
Intended for students who narrowly miss the ENG 101 Accuplacer cut scores. Students who narrowly miss passing ENG 033 may also be recommended by their instructor. With intensive focus on core skills necessary for ENG 101 and other 100-level courses, students read, analyze, and write argument-based essays.  

**4 lecture hours**

**ENG 034  Introduction to College Reading II  4 credits**
**Prerequisite:** ENG 033 or placement test
Intended to help students become better readers and thinkers who take ownership of their learning. Students read, analyze, discuss, and write on the material presented in the course. Introduction to intermediate college-level readings (both fiction and non-fiction) builds comprehension and study skills to succeed in college-level courses.  

**4 lecture hours**

**ENG 036  Composition and Reading Brush-Up  2 credits**
**Prerequisites:** Accuplacer scores of 61-87 Sentence Sense, 61-82 Reading, 5 Writeplacer; or instructor recommendation
Intended for students who narrowly miss the ENG 101 Accuplacer cut scores. Students who narrowly miss passing ENG 024 or 034 may also be recommended by their instructor. With intensive focus on core skills necessary for ENG 101 and other 100-level courses, students read, analyze, and write argument-based essays.  

**2 lecture hours**

**ENG 101  English Composition I  3 credits**
**Prerequisite:** placement test or minimum C grade in ENG 024 and ENG 034
College-level composition course designed to assist students in writing 750- to 1500-word essays on topics in various academic disciplines. Focuses on development and support of ideas, essay structure, critical thinking, analysis of readings, and other aspects of writing. Students are introduced to research techniques and documentation.  

**3 lecture hours**
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 102</td>
<td>English Composition II</td>
<td>3</td>
<td>ENG 101 with a minimum C grade</td>
</tr>
<tr>
<td></td>
<td>Second-level composition course designed to assist students in writing 1500- to 3000-word essays, including a formally documented research paper. Readings introduce students to literature and the analysis of concepts, language, and formal elements.</td>
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<td>3 lecture hours</td>
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<tr>
<td>ENG 112</td>
<td>English Composition II with Speech</td>
<td>3</td>
<td>ENG 101 with a minimum C grade</td>
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<tr>
<td></td>
<td>A variation on standard ENG 102, differing with its focus on the interpretation, analysis and creation of a broad spectrum of workplace documents rather than on literature. Construction of a lengthy, well-supported research paper and accompanying PowerPoint presentation is central. Speech component is fulfilled through multiple in-class presentations.</td>
<td></td>
<td>3 lecture hours</td>
</tr>
<tr>
<td>ENG 201</td>
<td>Introduction to Literature: Drama</td>
<td>3</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
</tr>
<tr>
<td></td>
<td>Examines the evolution of staged presentations from religious ritual to secular theater, covering works from the classical Greek period to the present day. Focuses on Elizabethan theater, Restoration comedy, 19th century realism, and contemporary theater.</td>
<td></td>
<td>3 lecture hours</td>
</tr>
<tr>
<td>ENG 202</td>
<td>Introduction to Literature: Novel</td>
<td>3</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
</tr>
<tr>
<td></td>
<td>Study of novels from various periods selected for their intrinsic value and as representative types of fiction.</td>
<td></td>
<td>3 lecture hours</td>
</tr>
<tr>
<td>ENG 203</td>
<td>World Literature I</td>
<td>3</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
</tr>
<tr>
<td></td>
<td>A survey of important literary works from cultures around the world dating from ancient times through the 17th century.</td>
<td></td>
<td>3 lecture hours</td>
</tr>
<tr>
<td>ENG 204</td>
<td>World Literature II</td>
<td>3</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
</tr>
<tr>
<td></td>
<td>A survey of important literary works from cultures around the world from the 17th century through the present day.</td>
<td></td>
<td>3 lecture hours</td>
</tr>
<tr>
<td>ENG 205</td>
<td>American Literature I</td>
<td>3</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
</tr>
<tr>
<td></td>
<td>Introduction to and selective study of authors representing the enduring traditions and styles of American literature from the Puritan period through the Civil War.</td>
<td></td>
<td>3 lecture hours</td>
</tr>
<tr>
<td>ENG 206</td>
<td>American Literature II</td>
<td>3</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
</tr>
<tr>
<td></td>
<td>Survey of American literature from 1865 to the present, including authors whose work represents the traditions and styles of American literature. Short stories, novels, poetry, and essays cover topics such as regionalism, realism, naturalism, modernism, and postmodernism.</td>
<td></td>
<td>3 lecture hours</td>
</tr>
<tr>
<td>ENG 208</td>
<td>Modern American Novel</td>
<td>3</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
</tr>
<tr>
<td></td>
<td>Traces the triumph of prose Realism over Naturalism and the recurrent forms and techniques of the contemporary novel in the American idiom. Emphasizes the novel as the dominant modern American literary art form, as a social document, and as a portrait of time and place.</td>
<td></td>
<td>3 lecture hours</td>
</tr>
<tr>
<td>ENG 211</td>
<td>Shakespeare</td>
<td>3</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
</tr>
<tr>
<td></td>
<td>A survey of Shakespeare’s tragedies, comedies, and histories – a body of work whose characters, themes, and language influence and permeate literature worldwide, and is essential to cultural literacy.</td>
<td></td>
<td>3 lecture hours</td>
</tr>
<tr>
<td>ENG 212</td>
<td>Introduction to Literature: Poetry</td>
<td>3</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
</tr>
<tr>
<td></td>
<td>Explores poetry as imagery, figurative language, allusion, tone, rhythm, meter, rhyme and stanza form. Students read major English and American poetry as well as verse from a variety of cultures to provide background for reading poems more incisively.</td>
<td></td>
<td>3 lecture hours</td>
</tr>
<tr>
<td>ENG 213</td>
<td>African American Literature</td>
<td>3</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
</tr>
<tr>
<td></td>
<td>A survey of literary works by writers of the African Diaspora produced in the Americas from the 18th century to the present. Proceeds chronologically, starting with African-born producers of the literature, oral and written, continuing with the folk tradition, moving through the slave narratives, the Harlem Renaissance, the Black Arts Movement and ending with contemporary works and the immigrant experiences.</td>
<td></td>
<td>3 lecture hours</td>
</tr>
<tr>
<td>ENG 215</td>
<td>Creative Writing I</td>
<td>3</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
</tr>
<tr>
<td></td>
<td>Develops writing skills in various genres, such as fiction, poetry, and essay. Recognized models in literary modes are analyzed for craftsmanship. Through workshop framework, students benefit from peer and instructor criticism and are encouraged to find individual voice under instructor guidance. [Not a Literature elective.]</td>
<td></td>
<td>3 lecture hours</td>
</tr>
<tr>
<td>ENG 216</td>
<td>Literature Into Film</td>
<td>3</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
</tr>
<tr>
<td></td>
<td>Focuses on the marriage of two art forms – literature and film – and pays particular attention to how the medium affects the writer and the writer the medium. Examines selected novels, short stories, plays, essays and/or memoirs as original works and as each evolves into film.</td>
<td></td>
<td>3 lecture hours</td>
</tr>
<tr>
<td>ENG 218</td>
<td>Creative Writing II</td>
<td>3</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
</tr>
<tr>
<td></td>
<td>Promotes continuing development of creative writing skills; analyzes recognized models by major modern writers. Through workshop framework, peers and instructor critique student work. Students are encouraged to hone their writing voices under instructor guidance. [Not a Literature elective.]</td>
<td></td>
<td>3 lecture hours</td>
</tr>
</tbody>
</table>
ENG 220 Science Fiction Literature 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
Explores science fiction through a study of genre elements and the challenges these genres present. By examining a diverse selection of speculative literature, participants better appreciate and interpret such works and how they both reflect and change our culture. 3 lecture hours

ENG 221 Women in Literature 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
A discussion-based course that explores literature by women writers. Texts cover a variety of authors and genres as well as themes, issues and theories concerning the production of gender in literary works. Further develops the literary analysis and academic writing skills acquired in ENG 102. 3 lecture hours

ENG 222 Children’s Literature 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
Critical evaluation of the various genres of literature written for children. Examines ancient folk tales like Aesop’s Fables, modern picture books such as those by Maurice Sendak, and classic fiction such as the masterpieces of Lewis Carroll and Mark Twain. 3 lecture hours

ENG 227 English Literature I 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
Survey of representative English literature from the Middle English period through the Neoclassical period. Particular attention to the works of Chaucer, Shakespeare, Milton, Donne, Dryden and Pope. 3 lecture hours

ENG 228 English Literature II 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
Survey of representative English literature from the Romantic and Victorian periods up to the present. 3 lecture hours

ENG 231 Literature of AIDS: Confronting Catastrophe 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
Close readings of the stories and poems emerging from AIDS-affected writers, with widely representative writing emphasizing the work of gay authors. Examines divergent responses to the widespread societal denial of AIDS. 3 lecture hours

ENG 232 Post-Colonial Women Writers 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
Examines works written in English by women of color in Asia, Africa, the Americas, and Australia. Explores contributions of the writer to the body of modern world literature – poetry, fiction, drama – along with aspects of the writers’ politics and the social milieus that form their work. 3 lecture hours

ENG 233 American History and Literature 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
[also offered as HIS 238] An interdisciplinary examination of American literature and society with special emphasis on contemporary perspectives and the historical context in which texts were written. Focuses on American history and literature since 1865, covering such topics as gender, race, ethnicity and immigration, social class, the West, war, and popular culture. 3 lecture hours

ENG 234 Literature of War and Conflict 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
Examines war literature through a study of genre elements and the challenge this genre presents to readers of mainstream literature. By examining works written in and translated to English, participants better appreciate and interpret such works and how they represent an increasingly important sub-section of literary expression. 3 lecture hours

ENG 235 Anthropology ofLiterature 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
Explores literature through a study of genre elements and the challenge this genre presents to readers of mainstream literature. By examining works written in and translated to English, participants better appreciate and interpret such works and how they represent an increasingly important sub-section of literary expression. 3 lecture hours

ENG 236 Environmental Literature 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
Examines environmental literature through a study of genre elements and the challenge this genre presents to readers of mainstream literature. By examining works written in and translated to English, participants better appreciate and interpret such works and how they represent an increasingly important sub-section of literary expression. 3 lecture hours

ENG 237 Reception ofLiterature 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
Examines literature through a study of genre elements and the challenge this genre presents to readers of mainstream literature. By examining works written in and translated to English, participants better appreciate and interpret such works and how they represent an increasingly important sub-section of literary expression. 3 lecture hours

ENT—Engineering Technology

ENT 116 Engineering Graphics 2 credits
Corequisites: ENG 033 and MAT 033 or equivalent proficiency
Broad-based course in basic graphic concepts of engineering drawing, including such topics as orthographic projection, sectioning, isometric drawing, and dimensioning. 1 lecture/2 laboratory hours

ERG—Energy

See Energy Utility Technology (UTI) courses, page 188.

ESL—English as a Second Language

Note: Initial selection of an ESL course is determined by results of ESL placement testing (see page 8).

ESL 090 ESL Introduction to Grammar 4 credits
Prerequisite: score of 55 or lower on ESL Accuplacer
Introduces students to the systematic knowledge of basic English grammar connected in an American cultural context. Provides learners with useful and meaningful skills to apply the beginning grammar necessary to communicate verbally and in writing. Thematic topics focus on the present, present continuous, future, and past tenses. 4 lecture hours

ESL 103 ESL Speech Concepts I 3 credits
Prerequisite: score of 57-79 on ESL Accuplacer
Emphasizes spontaneous oral English for students at the ESL Grammar I level or above. Activities involve thematic material in small-group sessions as well as whole group presentations. Develops listening as well as speaking skills. 3 lecture hours
ESL 104 ESL Advanced Speech Concepts 4 credits
Prerequisite: score of 80-99 on ESL Accuplacer/Speech
or 133 (computer-based) / 450 (paper-based) TOEFL
or completion of ESL 103
Advanced ESL pronunciation course for students who already are conversational in English but who need to improve their pronunciation skills. Students practice the vowel, consonant and diphthong sounds, and study the use of stress in words and sentences for correct pronunciation as well as for meaning.

ESL 121 ESL Grammar Concepts I 4 credits
Prerequisite: score of 57-79 on ESL Accuplacer/Speech
Intermediate-level English grammar course for students who have an elementary knowledge of English but are weak in grammar. A systematic study of English language structure, covers English word order in basic sentence types and emphasizes verb forms from the simple present to the perfect tenses.

ESL 122 ESL Grammar Concepts II 4 credits
Prerequisite: score of 80-99 on ESL Accuplacer/Speech
or 133 (computer based) / 450 (paper based) TOEFL
or ESL 121 with a minimum C grade
Advanced-level English grammar course, prepares students to write English language paragraphs and essays. Study includes the higher verb tenses, the passive voice, noun and adjective clauses, as well as articles, prepositions, idiomatic expressions, and other structures specific to English.

ESL 123 ESL Grammar Concepts III 4 credits
Prerequisite: completion of ESL 122 with a minimum C grade or placement at ESL 135 (Writing III) level
or score of 100-120 on ESL Accuplacer/Speech
The highest-level English grammar course, designed for students at the ESL exit level. Study involves advanced structures including gerunds and infinitives, modifying clauses, and the subjunctive mood, as well as other fine points of grammar specific to idiomatic English.

ESL 133 ESL Writing Concepts I 4 credits
Prerequisites: score of 57-79 on ESL Accuplacer/Speech
and score of 2 on ESL WritePlacer
or 407 (100 computer-based) TOEFL
Introduction to writing through the construction of basic English sentences. Guided exercises are designed to teach sentence patterns while building vocabulary in selected topic areas.

ESL 134 ESL Writing Concepts II 4 credits
Prerequisites: score of 80-99 on ESL Accuplacer/Speech
and score of 3-4 on ESL WritePlacer
or 133 (computer-based) TOEFL
Sentence patterns, sentence sequences, and the development of a paragraph are emphasized. The student learns to correct errors in grammar and punctuation to produce standard English sentences which support a topic. Outstanding performance in this course may qualify the student to enroll in ENG 101, English Composition I.

ESL 135 ESL Writing Concepts III 4 credits
Prerequisites: score of 100-120 on ESL Accuplacer/Speech
and score of 5 on ESL WritePlacer, or completion of ESL 134
Stresses spontaneous, fluent, idiomatic writing. Includes practice in various forms of writing, from personal to more formal, using various source materials ranging from magazines to works of fiction. Students who successfully complete this course qualify to enroll in ENG 101, English Composition I.

ESL 140 ESL Intermediate Critical Reading 4 credits
Prerequisites: score of 71-89 on ESL Accuplacer and score of 3-4 on ESL WritePlacer
or 133 (computer-based) / 450 (paper-based) TOEFL
Intended for students who are enrolling in college courses that require sophisticated reading skills and critical thinking. Through fiction and nonfiction readings, vocabulary, retention, inference, research techniques, test-taking strategies, and critical analysis are stressed.

ESL 141 ESL Advanced Critical Reading 4 credits
Prerequisites: score of 90-120 on ESL Accuplacer and score of 5 on ESL WritePlacer, or completion of ESL 140
Corequisite: taking ESL 135 concurrently is strongly recommended
Designed for second-language acquisition students who will be enrolling in college-level courses that require refined reading skills and critical thinking/analysis abilities. Focus on fiction and nonfiction readings with stress on developing meaning from text and deconstructing text through analysis and understanding of vocabulary.

ESL 150 ESL Accent Reduction I 2 credits
Prerequisites: ESL 133 ESL Writing Concepts I 4 credits
Prerequisite: eligibility for placement in ENG 101
An introduction to English phonetics and pronunciation in the context of a topic. The student is evaluated on their pronunciation skills. Students practice the vowel, consonant and diphthong sounds, and study the use of stress in words and sentences for correct pronunciation as well as for meaning.

ESL 151 ESL Accent Reduction II 2 credits
Prerequisites: ESL 121 / ESL 103 / ESL 133 course cluster or higher
Emphasizes stress, rhythm, intonation, and everyday speech patterns for non-native English speakers who are at the ESL Grammar I level or above. Activities involve thematic material in small group sessions as well as whole group and individual presentations. Both listening and speaking skills are developed.

ETT—Entertainment Technology

ETT 102 Introduction to the Entertainment Industry 3 credits
Prerequisite: eligibility for placement in ENG 101
An introduction to terminology, working methods, processes, equipment, and facilities for various entertainment industry venues with a particular emphasis on theatre and music technology and production. Laboratory work includes an introduction to various lighting programs and digital audio production software. Related current events and career opportunities are discussed. Attendance at several applicable events is required.

ETT 200 Technical Production 1 credit
Prerequisites: ETT 102, THR 102, and prior advisor approval
Supervised laboratory in the technical areas of production including planning, construction, and running of productions. Emphasizes careful pre-planning and appropriate safety procedures along with follow-up critiques and evaluation of the work done. Graded on pass-fail basis.

ETT 205 Arts and Entertainment Management 3 credits
Prerequisite: ETT 102 with a minimum C grade
An introduction to common issues and best practices in the management of arts and entertainment organizations. Students gain a basic understanding of business requirements and challenges in producing entertainment. Topics include common management structures in not-for-profit and for-profit arts and entertainment organizations, marketing, public relations, fundraising, budgeting, and human resources. Legal concerns addressed include contracts, copyright, licensing, and royalties.
ETT 290  Entertainment Technology  
Internship  2 credits  
Prerequisites: ETT 200 and prior advisor approval  
Work experience at a professional scenery fabrication shop, rental/supply house, off-Broadway theater, or any entertainment-related organization. Serves to bridge the student's academic and commercial careers by cultivating professional work experience and industry contacts. Each student, supervised by faculty and a manager at the internship site, creates a portfolio and keeps a log/journal to be shared in group seminars. Graded on pass-fail basis. 1 class hour every other week.  
190 internship hours

FAS—Fashion

FAS 105  Fashion: The Global Marketplace  3 credits  
Prerequisite: placement in college-level English  
An overview of the fashion industry beginning with a historical perspective that covers both domestic and international influences. Integrates creative fashion concepts with business concepts commonly used in general marketing. Topics include international sourcing and trade, and retailing.  
3 lecture hours

FAS 110  Introduction to Fashion Drawing  3 credits  
Prerequisite: ART 102  
Coordinated with Fashion Design I, develops techniques, skills, and knowledge needed to produce fashion drawings that are clear, accurate, realistic and attractive. Vocabulary of various clothing styles and details are introduced.  
1 lecture/4 laboratory hours

FAS 120  Introduction to Fashion Design I  3 credits  
Corequisite: FAS 130  
Coordinated with Introduction to Fashion Drawing, emphasizes development of color stories, concepts and fabrications. Study includes exploration of visual sensitivity, mastering fashion terminology, developing original design concepts, as well as storyboard compiling and design research.  
1 lecture/4 laboratory hours

FAS 130  Introduction to Textiles for Fashion  3 credits  
Prerequisite or Corequisite: ENG 101  
Explores how textiles are produced and how appropriate performance characteristics are incorporated into materials and products. Students make informed decisions regarding materials and products to communicate effectively with team members in the workplace, suppliers, contractors and buyers. Careers in the global textile industry are discussed.  
3 lecture hours

FAS 140  Computerized Fashion Drawing  3 credits  
Corequisite: FAS 110  
Covers two computer software applications used in the fashion design industry to design and create apparel and accessories. Projects explore a range of fashion designing and related drawings in both vector and pixel-based applications.  
1 lecture/4 laboratory hours

FAS 150  Technical Skills for Apparel Production I  3 credits  
Introduces muslin draping techniques on the dress form, flat pattern making, and garment construction on the sewing machine. Based on the scope of a student's project or level of study, additional costs for materials and supplies are required.  
1 lecture/4 laboratory hours

FAS 205  Fashion Merchandising  3 credits  
Prerequisites: BUS 101, ENG 101, MKT 101, MKT 230  
An integrated and customer-centered approach to merchandising. Covers strategic planning, product objectives and categories, industry zones, and product life cycles. Topics include pricing, positioning, placement, market research, environments, demographics, geographics, and psychographics. Emphasizes fashion forecasting with the buying-selling cycle for retail buyers.  
3 lecture hours

FAS 220  History of Costume Design  3 credits  
Prerequisite: FAS 105  
Comprehensive overview of fashion history and its development as a globalized industry. A survey of chronologically geographic and cultural trends that have influenced modern fashion addresses men's and women's clothing and accessories.  
3 lecture hours

FAS 230  Fundamentals of Fashion Buying  3 credits  
Prerequisites: FAS 105, FAS 205  
Covers methods of analyzing customer demand, assisting retailers with merchandising activities, product sourcing, logistics related to importing, and techniques to maximize profits. Students produce reports to evaluate sales and profitability performance as well as management strategies.  
3 lecture hours

FAS 250  Technical Skills for Apparel Production II  3 credits  
Advanced sewing/draping skills are developed to produce finished garments from individually designed fashion and apparel pieces. Based on the scope of a student's project or level of study, additional costs for materials and supplies are required.  
1 lecture/4 laboratory hours

FAS 260  Fashion Design II: Portfolio  3 credits  
Prerequisites: FAS 110, FAS 120  
Enables students to finalize an original, professional portfolio showcasing individual abilities and skills. Students select a target market as well as a product focus which best display their proficiencies and prepare them for further study or careers in the fashion industry.  
1 lecture/4 laboratory hours

FIR—Fire Science

FIR 101  Introduction to Fire Science  3 credits  
History and philosophy of fire protection and prevention involves a survey of equipment, tactics, building construction, extinguishing agents, hazardous materials, and fire department organization.  
3 lecture hours

FIR 104  Building Construction  3 credits  
Examination of building design and construction with emphasis on fire protection and life safety. Review of pertinent standards and codes.  
3 lecture hours

FIR 107  Fire Prevention and Code Enforcement I  5 credits  
History, theory, and practice of fire prevention and code enforcement. Covers relevant codes, recognition of fire hazards, and implementation of an inspection program. Meets 90-hour requirement to sit for the Fire Inspector Prevention I examination leading to certification as a Fire Inspector in New Jersey.  
4 lecture/2 laboratory hours

FIR 201  Hazardous Materials  3 credits  
Prerequisite: CHE 100 or equivalent background  
Study of basic fire chemistry relating to the categories of hazardous materials including problems of recognition, reactivity, and health encountered by firefighters.  
3 lecture hours
### COURSES

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABT 104</td>
<td>Application</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACC 205</td>
<td>Accounting Principles and Procedures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIR 202</td>
<td>Water Supply for Fire Protection</td>
<td>3</td>
<td>Explores water supply storage and distribution as well as efficient use of water at the fire scene.</td>
</tr>
<tr>
<td>FIR 203</td>
<td>Fire Protection Systems</td>
<td>3</td>
<td>Study of various automatic detection and signaling devices and systems, automatic sprinklers, standpipes, and special extinguishing installations.</td>
</tr>
<tr>
<td>FIR 204</td>
<td>Fire Fighting Tactics</td>
<td>3</td>
<td>Examines pre-fire planning, fire ground organization and problem-solving, and proper utilization of manpower and equipment.</td>
</tr>
<tr>
<td>FIR 205</td>
<td>Fire Department Organization</td>
<td>3</td>
<td>Study of the history, methods, types, and principles of fire department organization and management. Emphasizes supervisory responsibilities.</td>
</tr>
<tr>
<td>FIR 206</td>
<td>Fire Investigation</td>
<td>3</td>
<td>Provides the fundamental and technical knowledge needed for proper fire scene interpretations, including recognizing and conducting origin and cause.</td>
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<tr>
<td>FIR 208</td>
<td>Fire Department Safety and Health Administration</td>
<td>3</td>
<td>Develops an understanding of fire service safety and risk management programs including fire service requirements, compliance with OSHA regulations, national consensus standards, and NFPA 1500.</td>
</tr>
<tr>
<td>FIR 209</td>
<td>Fire Prevention and Code Enforcement II</td>
<td>3</td>
<td>Prerequisite: FIR 107 Examines duties of the fire official, legal aspects, and coordination with other governmental agencies. Topics include fire code administration, principles of personnel management, records management, variances, penalties, and enforcement procedures. Approved by the New Jersey Bureau of Fire Safety toward Fire Official certification pursuant to the Uniform Fire Safety Act.</td>
</tr>
<tr>
<td>FRE 201</td>
<td>Intermediate French I</td>
<td>3</td>
<td>Placement by exam, or permission of instructor.</td>
</tr>
<tr>
<td>FRE 202</td>
<td>Intermediate French II</td>
<td>3</td>
<td>Prerequisite: FRE 201 with a minimum C grade, placement by exam, or permission of instructor.</td>
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<tr>
<td>FRE 101</td>
<td>Beginning French I</td>
<td>3</td>
<td>The first in a sequence of courses designed for students with little or no prior knowledge of French. Spoken communication in French is both the end goal and the means of instruction. Emphasizes the four communicative skills in a culturally authentic context. Reading and writing are assigned out of class to facilitate effective listening and speaking practice in class. Basic grammar skills are also introduced.</td>
</tr>
<tr>
<td>FRE 200</td>
<td>Beginning French II</td>
<td>3</td>
<td>Prerequisite: FRE 101 with a minimum C grade, placement by exam, or permission of instructor.</td>
</tr>
<tr>
<td>FUN 203</td>
<td>Funeral Service Principles</td>
<td>3</td>
<td>Prerequisites: ENG 101 and enrollment in Funeral Service Program. Introduction to the basic services performed by the funeral director from first call to final disposition. Includes religious practices, Veterans Administration and Social Security, transportation and funeral merchandise. Emphasizes vocabulary, ethical practices and professional attitudes.</td>
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<tr>
<td>FUN 206</td>
<td>Introduction to Funeral Service</td>
<td>3</td>
<td>Prerequisites: ENG 101 and enrollment in Funeral Service Program. Focus on terminology, the impact of grief on society, the history of funeral service, and various professional organizations. Includes variations in funeral practices due to cultural differences, reactions to death, grief and bereavement, and the impact of family structures.</td>
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<tr>
<td>FUN 215</td>
<td>Funeral Service Law</td>
<td>3</td>
<td>Prerequisites: BUS 107 and enrollment in Funeral Service Program. Basic principles of law impacting the funeral service profession, with emphasis on common law, New Jersey statutes, rules and regulations and FTC compliance. Includes cemetery law, burial standards, rights and wrongs concerning the body and burial, and zoning restrictions.</td>
</tr>
</tbody>
</table>
FUN 217  Funeral Service Management  3 credits
Prerequisites: ACC 106, FUN 203, FUN 215
Business and management practices pertinent to funeral service with emphasis on small business. Particular consideration to staff organization, employer/employee relations, funeral home budget, funeral service merchandising, insurance, price determination and quotation, advertising, OSHA, and applicable federal regulations. 3 lecture hours

FUN 220  Funeral Service Laws, Rules and Regulations  1 credit
Prerequisite: FUN 215 or permission of Director of Funeral Service Programs
Laws, rules and regulations that specifically influence funeral service practice in New Jersey. Covers general licensure and intern requirements, rules for operating a funeral home, embalming procedures, general and specific rules of practice, advertising and continuing education. Compares and contrasts practices in New Jersey and Pennsylvania. 1 lecture hour

FUN 222  Funeral Service Pathology  3 credits
Prerequisite: BIO 106 (or BIO 103 and BIO 104) or permission of Director of Funeral Service Programs
Survey of the major diseases, including pathological changes related to disease processes and the effects of physical and chemical trauma on the human body. Facilitates understanding of medical terminology relevant to funeral service. 3 lecture hours

FUN 223  Funeral Service Counseling  3 credits
Prerequisites: FUN 206 and PSY 101 or permission of Director of Funeral Service Programs
Promotes an appreciation of care-giving roles in relation to grieving persons and addresses the background material, skills and procedures needed for helping situations. Situations requiring professional therapy are differentiated from those requiring referrals for more specialized counseling. 3 lecture hours

FUN 227  Restorative Art  3 credits
Prerequisites: BIO 106 (or BIO 103 and BIO 104); FUN 247 or permission of Director of Funeral Service Programs
Examines facial anatomy including underlying structures and facial features, restoration, color and cosmetics. Lab work develops proficiency in anatomical modeling and the practical application of cosmetics. 2 lecture/2 laboratory hours

FUN 229  Funeral Service Counseling  3 credits
Prerequisites: FUN 206 and PSY 101 or permission of Director of Funeral Service Programs
Promotes an appreciation of care-giving roles in relation to grieving persons and addresses the background material, skills and procedures needed for helping situations. Situations requiring professional therapy are differentiated from those requiring referrals for more specialized counseling. 3 lecture hours

FUN 247  Principles of Embalming I  3 credits
Prerequisites: BIO 106 (or BIO 103 and BIO 104), ENG 101 and enrollment in Funeral Service Program
Includes review of historical background, ethical and sanitary considerations, signs and tests of death, postmortem changes and basic procedures, instruments and equipment employed in embalming with emphasis on procedures for handling infectious/contagious disease. 3 lecture hours

FUN 249  Principles of Embalming II  2 credits
Prerequisite: FUN 247 with a minimum C grade
Continuation of FUN 247. Topics include cavity treatment, types of embalming chemicals and their uses, causes of embalming failure, discolorations, vascular difficulties, decomposition, dehydration, edema, deformities and malformations, and radiation. 2 lecture hours

FUN 251  Embalming Lab and Practicum  3 credits
Prerequisites: permission of Director of Funeral Service Programs; students must be registered interns
Develops practical embalming skills, combining work experience in a funeral home (16-20 hours per week) and at the MCCC embalming facility with discussion of applications. Topics include OSHA, embalming procedures, embalming products, cavity treatment, infant embalming and special cases. 3 lecture hours laboratory and/or discussion plus 224 hours of work experience

FUN 295  Funeral Service Field Experience  3 credits
Prerequisites: approval from Director of Funeral Service Programs; students must be registered interns
Combines classroom discussion with 16-20 hours per week as an intern (or student-trainee) in an approved funeral home. Topics include death certificates, permits, vital statistics compliance, computer applications, Social Security and Veterans Administration paperwork, obituary writing, government compliance and other current issues. 2 lecture/2 laboratory hours

FUN 299  NBE Preparation  1 credit
Prerequisite or Corequisite: required Funeral Service courses
In preparation for the Funeral Service program capstone event, the National Board Examination (NBE), students review topics covered in the curriculum through classroom discussion and practice tests. Students must take the NBE in order to graduate from the Funeral Service program(s). 1 lecture/1 studio hour

GAM—Game Design

GAM 120  Game Design Theory and Culture  3 credits
Students explore the historical and cultural significance of play through human history to include today's video game phenomenon by examining many game models across several genres. Conceptual and production processes involved in current industry game design and development are introduced, with particular emphasis on the design of creative models expressing gaming concepts. 1 lecture/4 laboratory hours

GAM 140  Game Design I  3 credits
Prerequisites: COS 101, DMA 120, DMA 135, ENG 101, GAM 120, or permission of instructor
Students develop fundamental skills designing computer games. Topics include environments, interfaces, rules, dynamics, play mechanics, goals, conflicts and aesthetics. Students learn to use standard industry level-building software and digital sculpting tools. Emphasis is placed on conceptual design of game play, interface, and the processes of 2D and 3D content creation. 1 lecture/4 laboratory hours

GAM 145  Game Programming I  3 credits
Prerequisite: COS 101
Course prerequisite: GAM 120
Analysis of an existing professional game engine contributes to an understanding of a game's architecture and development. Working within the limits of the game engine, students design their own programming projects, modifying the logic and engine to create custom game experiences. 2 lecture/2 laboratory hours

GAM 240  Game Design II  3 credits
Prerequisite: GAM 140
Emphasis on prototyping and level-building of game design concepts expands on the topics explored and skills developed in Game Programming I. Additional topics include content import and configuration, mapping, lighting, physics, and scripted interaction. 1 lecture/4 laboratory hours

GAM 260  Game Development  3 credits
Prerequisite: GAM 240
In this capstone course, students work in interdisciplinary production teams to develop computer games and modules utilizing industry-standard game engines. Coursework centers on producing scripted real-time modules, play testing, and documentation to specify game design concepts. 1 lecture/4 laboratory hours
**GEO—Geography**

**GEO 101 Geography** 3 credits
Surveys the main concepts of geography, including types of climate, topography, transportation and mapping. The current issues of environmental protection and city planning are studied with emphasis on the United States and political and economic factors. 3 lecture hours

**GEO 102 Cultural Geography** 3 credits
Surveys the cultural geography of people living in significant regions such as India, China, Japan, Europe, Canada, Africa, and Latin America. A study of the geography, history, art, and way of life of people in various nations leads to an appreciation of their cultural heritage and achievements. 3 lecture hours

**GER—German**

*Note: Students who have taken two or more years of a foreign language, and have done so in the last two years, should begin that language at the 200 level or switch to a new language. If there is doubt, placement will be determined by testing or consultation with the academic division.*

**GER 101 Beginning German I** 3 credits
The first in a sequence of courses designed for students with little or no prior knowledge of German. Spoken communication in German is both the end goal and the means of instruction. Emphasizes the four communicative skills in a culturally authentic context. Reading and writing are assigned out of class to facilitate effective listening and speaking practice in class. Basic grammar skills are also introduced. 3 lecture hours

**GER 102 Beginning German II** 3 credits
Prerequisite: GER 101 with a minimum C grade, placement by exam, or permission of instructor
The second in a sequence of courses designed for students with little or no prior knowledge of German. Spoken communication in German is both the end goal and the means of instruction. Emphasizes the four communicative skills in a culturally authentic context. Reading and writing are assigned out of class to facilitate effective listening and speaking practice in class. Basic grammar skills are also introduced. 3 lecture hours

**GER 201 Intermediate German I** 3 credits
Prerequisite: GER 102 with a minimum C grade, placement by exam, or permission of instructor
The first in a sequence of courses designed for students with a mid to high novice level of competency in German. Spoken communication in German continues to be the end goal and the means of instruction. The four communicative skills of reading, writing, listening and speaking are applied to discussions and debates involving German culture, politics, and history. Fundamental grammar points are reviewed. 3 lecture hours

**GER 202 Intermediate German II** 3 credits
Prerequisite: GER 201 with a minimum C grade, placement by exam, or permission of instructor
The second in a sequence of courses designed for students with a mid to high novice level of competency in German. Spoken communication in German continues to be the end goal and the means of instruction. The four communicative skills of reading, writing, listening and speaking are applied to discussions and debates involving German culture, politics, and history. Fundamental grammar points are reviewed. 3 lecture hours

**HIS—History**

**HIS 101 History of Western Civilization to 1648** 3 credits
[not recommended for students who have taken HIS 112] Introduction to the political, social, cultural, and economic events that distinguished Western civilization to 1648. Major topics include ancient Near Eastern civilizations, Greece and Rome, the Middle Ages, and the Renaissance and Reformation. Examination of highlight works, including literary and visual sources. 3 lecture hours

**HIS 102 History of Western Civilization Since 1648** 3 credits
[not recommended for students who have taken HIS 113] Introduction to the political, social, cultural, and economic events that have distinguished Western civilization since 1648. Major topics include Absolutism, the Scientific Revolution, the Enlightenment, the French Revolution, Industrialization, Nationalism, World Wars I and II, and recent trends. Examination of highlight works, including literary and visual sources. 3 lecture hours

**HIS 105 United States History to 1865** 3 credits
[not recommended for students who have taken HIS 112] Surveys American history to 1865 with emphasis on general concepts and processes. Examines colonial settlement and society, revolution and nation building, the market revolution and Jacksonian democracy, gender, slavery, and the Civil War. 3 lecture hours

**HIS 106 United States History Since 1865** 3 credits
Surveys American history since 1865 with emphasis on general concepts and processes. Examines Reconstruction, the Gilded Age, Progressivism, World Wars, the New Deal, the Cold War, civil rights, gender, social class, and 21st century issues. 3 lecture hours

**HIS 107 The Civil War** 3 credits
Examines slavery, sectionalism, the meaning of Union, racism, and the triumph of Industrial Capitalism. Assesses these issues from social, cultural, economic, and political perspectives to determine the causes, course, and effects of the American Civil War. 3 lecture hours

**HIS 109 African American History** 3 credits
Studies the history of the African American from the beginnings in the 15th century to the present. Special emphasis on the investigation and analysis of the historic sources of the problems that African Americans confront in America today. 3 lecture hours
HIS 110  Film and History  3 credits
An analytical and topical study of 20th century American social, cultural, economic, and political history as represented in film.  3 lecture hours

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<th>GenEd</th>
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<tr>
<td>HIS 112  World History to 1500  3 credits</td>
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[not recommended for students who have taken HIS 101]
Survey of world history from pre-history to 1500, examining the development of ancient societies in Asia, Europe, Africa, the Americas, and Oceania. Examines interactions among peoples of different societies including ancient Egypt and Nubia, India, classical Greece and Rome, the Islamic states, Han China, early Korea and Japan, and Andean and Mesoamerican societies.  3 lecture hours

HIS 122  American Sports History  3 credits
Examines sports’ prominence in American life since the mid-19th century. Focuses on sports as a reflection of our social, political and economic make-up and on sports’ ability to affect and shape our institutions. Particular attention is given to social class, race and ethnicity, gender, community, technology, and commercialization and the media.  3 lecture hours

HIS 207  American Constitutional History  3 credits
Study of the Constitution’s place in American history with emphasis on presidential authority, judicial interpretation, constitutional crises, the evolution of Federalism, and the status of civil liberty, past and present.  3 lecture hours

HIS 210  History of American Popular Culture  3 credits
Explores social, economic, and political contexts through examination of the films, sports, television, music, print media, literature, and fads that shape, influence, and respond to cultural trends.  3 lecture hours

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<td>HIS 213  Twentieth-Century World History  3 credits</td>
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Corequisite: ENG 101
Study of world history from the age of imperialism through the modern era. Focuses on the World Wars, the Cold War, colonization and decolonization, political ideologies, genocides, gender, race and ethnicity, religion, class, technology, poverty, terrorism, cultural history, and other global issues.  3 lecture hours

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<td>HIS 214  The United States Since 1945  3 credits</td>
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Intensive study of American history since World War II examines World War II, the Cold War at home and abroad, the Civil Rights movement, Vietnam, social upheavals and new forms of cultural expression during the 1960s, gender and class, technology, and 21st century issues.  3 lecture hours

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<td>HIS 215  The Holocaust and Other Genocides  3 credits</td>
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Prerequisite: HIS 102 or HIS 113 recommended
Analyzes the Holocaust and other genocides of the 20th and 21st centuries from an historical perspective. Specific topics include anti-Semitism in Europe, Nazism, the Final Solution, Armenian nationalism, the Khmer Rouge, and African genocides. Texts, testimonies, films, and other resources contribute to understanding events and responses. Particular attention is given to universal themes including prejudice, racism, evil, and moral responsibility.  3 lecture hours

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<td>HIS 218  History of Latin America  3 credits</td>
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Survey of Latin America from pre-Columbian origins to current times. Topics include Indian civilizations, discovery and conquest, colonial rule, independence movements, as well as 19th century and current issues and events.  3 lecture hours

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<td>HIS 220  History of Daily Life in the Modern Western World  3 credits</td>
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Examines the continuities and changes in daily life among ordinary people from the 17th century to the present. Although seemingly powerless for much of this period, certain social categories such as peasants, slaves, poor workers, and women played significant roles in the development of the modern world. This course explores those roles by studying the social and cultural aspects of daily life as revealed through a variety of primary sources and secondary studies.  3 lecture hours

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<td>HIS 221  History of American Women  3 credits</td>
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Studies the role and lives of outstanding women in selected historical periods, focusing on composite historical forces that shaped their lives. Current research in anthropology, psychology, and sociology supplements the historical content. [occasional offering]  3 lecture hours

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<td>HIS 225  History of England  3 credits</td>
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Survey from the earliest period to the present with emphasis on significant aspects of the Celtic, Roman, and Anglo-Saxon heritage, medieval and renaissance England, and English achievements in recent centuries in government, social reform, and culture. [occasional offering]  3 lecture hours

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<td>HIS 226  History of New Jersey  3 credits</td>
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Surveys New Jersey history from the pre-colonial era to the present, with special emphasis on race, gender, ethnicity, social class, and the state’s meaningful place in the larger story of American history. [occasional offering]  3 lecture hours

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<td>HIS 230  Special Topics in History  3 credits</td>
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Prerequisite: ENG 101 or permission of instructor
In-depth and specialized variable studies of some of the major individuals and cultural forces in U.S. and world history. Content may vary each time the course is offered. [Occasional offering.]  3 lecture hours

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<td>HIS 231  Women in Antiquity  3 credits</td>
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Examines the legal, social, and cultural roles and status of women in the Ancient Near East, Egypt, Greece, and Rome through review of ancient literature, legal and economic texts, art, and archaeology, supplemented with scholarly commentaries.  3 lecture hours
COURSES

HIS 232  Women in Europe Since 1500  3 credits
Examines, through a variety of sources, the history of women in Western society since 1500. Through close readings and critical discussion of literature, legal and economic texts, art, as well as scholarly commentary, a deeper appreciation of the legal, social, and cultural roles and status of women in Europe from the Reformation to the present is developed. While focusing mostly on the historical conditions of women, this course also explores the history of gender and sexuality. 3 lecture hours

HOS 238  American History and Literature  3 credits
Prerequisite: ENG 102 with a minimum C grade [also offered as ENG 238] An interdisciplinary examination of American literature and society with special emphasis on contemporary perspectives and the historical context in which texts were written. Focuses on American history and literature since 1865, covering such topics as gender, race, ethnicity and immigration, social class, the West, war, and popular culture. 3 lecture hours

HOS—Hospitality

HOS 100  Hospitality Success Skills  1 credit
Introduces skills necessary to be successful in the hospitality program and the hospitality industry. Emphasizes career options and how to make the most of the educational experience through self management, internship opportunities, and effective study habits. Additional topics include customer service, history and trends of the hospitality industry, and the role of cultural diversity. 1 lecture hour

HOS 101  Food Preparation I  3 credits
Corequisite: HOS 111
Introduction to the principles, skills, and techniques associated with the culinary arts, involving various cooking methods including classic and modern techniques. Identification of various kitchen staples, food products, and equipment used within the commercial food operation. Hands-on activities require the preparation of a wide variety of recipes. Chef whites required. 1 lecture/4 laboratory hours

HOS 102  Food Preparation II  3 credits
Prerequisites: HOS 101 and HOS 118 or equivalent proficiency
Refines culinary skills in quantity food preparation through operation of a student-run restaurant. Includes kitchen and dining room organization and operations; menu development and design; management of service and culinary personnel; service standards; serving the general public; merchandising and sales promotion; and banquet management. Chef whites required. 1 lecture/4 laboratory hours

HOS 103  Protocol for International Travel  3 credits
Develops awareness of other cultures as needed for international travel. Covers itinerary preparation, currency exchange, passports and visas, health and safety hazards, plus proper use of English and cultural interpretations of gestures. 3 lecture hours

HOS 104  Hotel Management and Lodging Operations I  3 credits
Preliminary study of operations and management in the lodging industry with special emphasis on front desk operations and management, housekeeping, corporate structure, staffing, sales, security, and accounting. 3 lecture hours

HOS 105  Food and Culture  3 credits
GenEd
Applying a global perspective of the symbolic, social, political, and economic role of food in different cultures, examines the geographical and historical conditions that give rise to various regional cuisines. Lectures, demonstrations, and hands-on participation reveal how institutions and organizations influence food habits and beliefs. 2 lecture/2 laboratory hours

HOS 109  Advanced Culinary Arts  3 credits
Prerequisites: HOS 101 and HOS 118 or equivalent proficiency
Comprehensive review of current culinary arts practices, including advanced professional culinary skills, recipes, techniques, and use of ingredients. Involves practice of a wide variety of classical and modern cooking techniques as well as basic and advanced sanitation measures in kitchen operations. 1 lecture/4 laboratory hours

HOS 110  Breakfast / Pantry  2 credits
Prerequisites: HOS 101, HOS 118, HOS 217
Covers basic breakfast preparation, presentation, and merchandising techniques for some basic baked goods, breakfast proteins, as well as garnishes. Practical laboratory experience involves preparing and serving meals. Use, safety, care, and storage of hand tools – including cook’s and vegetable knives – are emphasized. 1 lecture/3 laboratory hours

HOS 111  Culinary Math  1 credit
Prerequisite: MAT 037 (or MAT 037A and 037B)
Focus on key mathematic concepts related to culinary arts. Students demonstrate a working knowledge of topics including calculating yield percent, determining portion costs, periodic food costs, ‘selling price’ determinations, weights and measures, changing recipe yields, and converting between metric and U.S. measurements. 1 lecture hour

HOS 113  Dining Room I  1 credit
Prerequisite: HOS 102
An introduction to table settings, customer interaction, table service, and the point of sale system, with students serving meals in the on-site dining room. 2 laboratory hours

HOS 115  Food and Culture  3 credits
Gen Ed
Applying a global perspective of the symbolic, social, political, and economic role of food in different cultures, examines the geographical and historical conditions that give rise to various regional cuisines. Lectures, demonstrations, and hands-on participation reveal how institutions and organizations influence food habits and beliefs. 2 lecture/2 laboratory hours

HOS 116  Techniques of Healthy Cooking  3 credits
Prerequisites: HOS 101, HOS 118
Study of nutritional guidelines for selecting, preparing and cooking a wide variety of food products, including desserts. Cooking techniques include sautéing, roasting, steaming and grilling. Healthful menu planning applies “tricks of the trade” techniques to trim calories and fats. Chef whites required. 1 lecture/4 laboratory hours

HOS 118  Sanitation and Safety in Food Service Operations  2 credits
Laws and principles governing safe food service, from purchasing, receiving, preparing, serving, and storing to re-heating food products. Prepares students to take the National Restaurant Association Education Foundation certification exam as part of the course. 2 lecture hours

HOS 120  Introduction to the Hospitality Industry  3 credits
Close-up view of the lodging, food service, travel and tourism fields, with introduction to hospitality management, marketing, guest services, hospitality law, human relations and allied hospitality fields. 3 lecture hours
COURSES

HOS 123 Introduction to Travel and Tourism 3 credits
Develops skills in constructing itineraries; domestic and international ticketing; handling hotel, motel, and resort reservations; arranging cruises, tours, and car rentals; addressing customer and immigration issues. Emphasizes the responsibilities, professional behavior and ethics required for success.
3 lecture hours

HOS 124 Computerized Reservations 3 credits
Prerequisite: computer literacy
Provides an understanding of the various facets of travel/tourism reservations with an emphasis on developing skills in utilizing automated reservation systems. Students work with simulated system software widely used in the industry.
3 lecture hours

HOS 203 Hospitality Purchasing 3 credits
Prerequisite: HOS 111
Accepted practices for receiving, storing and issuing food and nonfood products within the hospitality industry. Covers purchasing major equipment, small wares, tableware, textiles, and vendor services.
3 lecture hours

HOS 204 Hospitality Marketing 3 credits
Addresses marketing plans, market research, market segmentation, positioning, consumer behavior, advertising, promotion, pricing theory, and hospitality group sales.
3 lecture hours

HOS 205 Menu Planning/Costing and Design 2 credits
Prerequisite: HOS 111
Applicable to a wide variety of food service operations, covers pricing strategies and support systems, ordering, conversion of recipes from small to large quantities, physical types of menus, marketing strategies, and food preferences of the public. Special emphasis on the planning of nutritional menus.
2 lecture hours

HOS 207 Grilling, Barbecuing, and Smoking 3 credits
Introduction to the principles, techniques and skills necessary to prepare outdoor meals. Students prepare a wide variety of foods using grilling, barbecuing, and smoking cooking techniques.
2 lecture hours

HOS 208 Hospitality Law 3 credits
Introduction to hospitality law, its effect on hospitality management, and the legal principles that govern the hospitality industry.
3 lecture hours

HOS 209 Garde Manger 3 credits
Prerequisites: HOS 101 and HOS 118 with a minimum C grade
Addresses basic and advanced garde manger and charcuterie techniques such as the preparation and serving of hot and cold hors d’oeuvres, aspics, pates, mousses, terrines, and cold dishes along with advanced techniques for the planning and arrangement of buffets. Covers table arrangement and planning, creation of model nonedible food displays, as well as manipulation of specialized tools to produce decorative buffet items and showpieces such as ice sculptures, pastillage, marzipan, and fondant.
1 lecture/4 laboratory hours

HOS 210 Applied Kitchen Skills – Cafe 3 credits
Prerequisites: HOS 102, HOS 217
An advanced course in pantry and deli preparation and organization. Developing speed skills with quantity production while following industry guidelines for sanitation and safety, students demonstrate proper plate presentation, including seasonal production, in a dining room pantry.
1 lecture/4 laboratory hours

HOS 213 Dining Room II 2 credits
Prerequisite: HOS 113
A continuation of HOS 113. Topics include beverage service, sales techniques, advanced point of sale functions, and French table service. Serving formal meals in the on-site dining room reinforces and expands knowledge of fine dining to include executing the order of service, wine and food affinities, and merchandising the menu.
1 lecture/2 laboratory hours

HOS 217 Professional Baking I 3 credits
Prerequisites: MAT 037 (or MAT 037A and 037B) Corequisite: HOS 111
Fundamental principles and procedures for preparing baked goods, pastries, and desserts. Promotes the understanding of baking formulas in bakeshop production planning and ability to produce high-quality items through the development of manual skills. Stresses the use of equipment and supplies in a safe and sanitary manner. Chef whites required.
1 lecture/4 laboratory hours

HOS 218 Professional Baking II 3 credits
Prerequisites: HOS 111, HOS 118, HOS 217
Intermediate principles and procedures for preparing baked goods, specialty cakes, pastries and pies. Emphasizes producing quality items through the development of manual skills, knowledge of ingredients and proper use of advanced bakery formulas. Stresses use of high-quality ingredients, equipment, advanced manual skills, and safe and sanitary bakeshop practices.
1 lecture/4 laboratory hours

HOS 219 Professional Baking III 2 credits
Prerequisites: HOS 118, HOS 217
Advanced principles and procedures for preparing baked goods, specialty cakes, pastries and pies, and other specialty desserts. Emphasizes producing high-quality items.
1 lecture/3 laboratory hours

HOS 230 Experimental Kitchen 2 credits
Prerequisites: HOS 101, HOS 111, HOS 118; MAT 108 or higher
Covers tastes and flavors (sweet, salt, bitter, sour, and umami). Students explore culinary herbs and spices, salts, peppers, oils, vinegars, essences, fragrances, oleoresins, concentrates, freeze dried fruit and vegetable products, and other flavor carriers used in cooking and culinary research and development. Includes a hands-on lab application of techniques learned.
1 lecture/3 laboratory hours

HOS 231 Meat, Poultry and Fish Fabrication 1 credit
Prerequisites: HOS 101, HOS 118
Addresses the fundamentals of purchasing specifications; receiving, handling, and storing meat and seafood; plus techniques for fabricating cuts for professional kitchens.
2 laboratory hours

HOS 235 American Regional Cuisine 2 credits
Prerequisites: HOS 102, HOS 109
Prepare, taste, serve, and evaluate traditional regional dishes of America. Study and practices emphasize ingredients, flavor profiles, preparations, and techniques representative of cuisines of the United States.
1 lecture/3 laboratory hours

HOS 240 Classical Cuisine / Advanced International 2 credits
Prerequisites: HOS 102, HOS 115
Students will demonstrate a working knowledge in their approach to flavor profiles by applying cooking methods practiced by each ethnic group visited. Traditional preparation and plate presentation is emphasized utilizing both classic and modern approaches.
1 lecture/3 laboratory hours
HOS 245  Chocolates and Confections / Retail Bakeshop  3 credits
Prerequisites: HOS 218, HOS 219
The essentials for creating sculptures, forming simple centers, pieces, and preparing chocolates and other confections with soft, hard, and liquid centers. Along with merchandising concepts, traditional and contemporary production practices are explored for products including pastillage, nougatine, and assorted sugar and chocolate decorative pieces. 1 lecture/4 laboratory hours

HOS 246  Artisanal Breads  2 credits
Prerequisites: HOS 218, HOS 219
An in-depth study and practice of Artisan bread baking. Old World techniques are applied with an emphasis on levians, poolish, and sponge bread methods. 1 lecture/3 laboratory hours

HOS 247  Restaurant Desserts  3 credits
Prerequisites: HOS 218, HOS 219
How to produce and merchandise restaurant-style desserts. Along with an emphasis on dessert menu planning, production techniques are practiced in various kitchens, garnish, and component style desserts. 1 lecture/4 laboratory hours

HOS 248  Advanced Pastry  3 credits
Prerequisite: HOS 218, HOS 219
Integrates training in baking and pastry arts, academic studies, and field experience using fundamental baking and pastry techniques, topics of contemporary significance, food science, aesthetics, and sensory perception as frameworks. Building on previous baking and pastry classes, students research recipes, produce them for consumption, evaluate them, and cost them. Additional assignments include short essays, a detailed project, menu development, and service demonstrations. 1 lecture/4 laboratory hours

HOS 290  Internship in Hotel, Restaurant, and Institution Management  2 credits
Prerequisites: minimum GPA of 2.0 or permission of program coordinator; eligibility usually limited to students in final semester before graduation
Supervised field experience in the operation and management of various departments or functional areas at selected hotels, restaurants, and institutions. Focus on leadership skills, human relations development, service in the hospitality industry, and reducing turnover with teamwork. 1 lecture/240 internship hours

HOS 291  Culinary Internship  2 credits
Prerequisites: HOS 109 or HOS 219, sophomore status, and permission of program coordinator; eligibility generally limited to students who have completed 30 credits
Consists of two components: a supervised field experience working in various kitchen or pastry positions in a commercial kitchen; and classroom exercises and activities involving development of human relations, teamwork, and leadership skills. Service in the hospitality industry as well as culinary career opportunities are additionally addressed. 1 lecture/400 internship hours

HPE—Health / Physical Education

HPE 091  Introduction to Health Careers  2 credits
Prerequisite: ENG 034
Designed for any student interested in a career in the health professions. Provides an introduction to the educational pathways, roles, and responsibilities of health care providers, and an overview of a variety of health professions, plus opportunities to actually observe additional career options in the health care field. 2 lecture hours

HPE 101  Basic Concepts of Nutrition  3 credits
Prerequisites: MAT 033 and ENG 024 or equivalent
Study of the fundamental concepts of nutrition with emphasis on the relationships of nutrients to health. Topics include basic diet constituents, principles of body function, considerations for various age groups, dietary regulations, myths, food patterns, weight control, and food safety. 3 lecture hours

HPE 105  First Aid, CPR and AED  3 credits
Prerequisites: HOS 109 or HOS 219, sophomore status, and ENG 101 and HPE 110 or HPE 111
BIO 103, ENG 101 and HPE 110 or HPE 111
Prepares rescuers and lay responders with the knowledge and hands-on skills necessary to safely minimize the consequences of injury and illness and help sustain life in an emergency until medical help arrives. Successful candidates earn Basic Life Saving Healthcare Provider CPR/AED and Heartsaver First Aid Certifications through the American Heart Association. 2 lecture/2 laboratory hours

HPE 110  Concepts of Health and Fitness  2 credits
Prerequisite: ENG 033 or equivalent
Through lectures and laboratories, essential knowledge and skills in health and all dimensions of wellness are explored. Through self-assessments, students develop a wellness profile and program designed to achieve and/or maintain optimal lifelong health and wellness. Physical activity is required. 1 lecture/2 laboratory hours

HPE 111  Living with Health  3 credits
Prerequisite: ENG 034 or college-level proficiency in reading
Through self-assessments and critical thinking, students optimize their physical, psychological, social, intellectual and environmental well-being. Topics include health determinants, disease, disability, consumer education, health literacy, infectious and chronic diseases, aging, diversity, immediate and long-term effects of lifestyle choices including fitness, diet, stress management, destructive behaviors, dependency, and sexuality. 3 lecture hours

HPE 113  Medical Terminology  3 credits
Prerequisite: ENG 101 placement
Basic medical terms with an emphasis on general organizational principles. Topics include the use of prefixes, suffixes, and roots to convey meaning. Exercises provide practice with vocabulary, pronunciation, and report writing. Appropriate for students in nursing, allied health, and medical office assistant programs. 3 lecture hours

HPE 115  Introduction to Public Health  3 credits
Prerequisites: ENG 024, ENG 034, MAT 037
Introduces current issues in public health from the local and global perspective. Topics include community health problems, communicable disease control, epidemiology, public health response to bioterrorism, biomedical research, individual and group behavior, public health nursing, and indicators in the population/community. 3 lecture hours

HPE 134  Prevention, Assessment and Care of Athletic Injuries  3 credits
Prerequisites: BIO 103, ENG 101 and HPE 110 or HPE 111
The art and science of athletic training with emphasis on relating theory and practice. Topics include terminology; injury prevention; and the causes, symptoms, and care of common sports injuries. 3 lecture hours

HPE 151  Introduction to Exercise Science  1 credit
A series of lectures, guest presentations, and student-initiated field interviews introduces the history and future of exercise science; the wide range of related careers; current issues in health, wellness, and fitness; and various professional and certifying organizations. 1 lecture hour
HPE 163  Principles of Coaching  2 credits
How to plan, organize, and direct a team sports program. Includes facilities, regulations, legal issues, safety, equipment, staffing, strategy, and public relations. Suitable for volunteers working in youth programs and students contemplating further study in sports and leisure services. 2 lecture hours

HPE 171  Personal Fitness  1 credit
Assists in the development of a personal fitness program including weight and cardiovascular fitness equipment. Emphasizes strength, flexibility, cardiovascular, and weight control. A medical history is required; a physical exam may be required. Full-time students who complete this course may use the Fitness Center free of charge. 1 lecture hour

HPE 175  Health Through Stress Management  1 credit
Examines the nature of stress, factors that predispose one to stress, reactions to stress, and positive techniques to help control stress. 1 lecture hour

HPE 211  Swimming (Co-Ed)  1 credit
Provides basic instruction in swimming skills, with opportunity to obtain both American Red Cross Beginners and Intermediate certifications. 2 laboratory hours

HPE 220  Team Sports I  1 credit
Fundamental skills, basic strategies, and knowledge of rules and playing courtly developed for selected team sports including basketball, football, soccer, softball, and volleyball. 2 laboratory hours

HPE 225  Beginning Tennis  1 credit
Introduces new players to the following strokes and grips: forehand, backhand, serve, volley, lob, and overhead smash. Additionally addresses rules, scoring, tennis etiquette, and tennis vocabulary. Utilization of videotapes, practice drills, and game situations develop skills. 2 laboratory hours

HPE 226  Intermediate and Advanced Tennis  1 credit
Prerequisite: HPE 225 or permission of instructor
For students who have received formal instruction (such as HPE 225), have played competitively, or who have been playing for two or three years and can rally consistently with an opponent. Skills presented include the slice, drop shot, half volley, drop volley, offensive lob, defensive lob, and slice serves. Additionally covers footwork and strategy. 2 laboratory hours

HPE 241  Applied Exercise Physiology  3 credits
Prerequisites: BIO 103, ENG 101
 Addresses anatomical, biomechanical, and physiological effects of physical activity on the human body as well as methods of assessment and how to design and implement exercise programs for individuals and groups. Lab activities include practical applications of theoretical concepts. 2 lecture/2 laboratory hours

HPE 242  Exercise Measurement and Prescription  3 credits
Prerequisites: BIO 103, BIO 104, HPE 241
Emphasizes development of the protocol knowledge and skills necessary for appropriate assessments and exercise prescriptions which cater to the physical fitness needs of generally healthy populations, those with medical protocol considerations, and athletic populations. 2 lecture/3 laboratory hours

HPE 243  Exercise Science Field Experience  3 credits
Prerequisites: BIO 103, BIO 104, ENG 101, HPE 242
Provides essential experiences and networking opportunities in an exercise science setting suitable to student interests. Emphasizes career planning and the application of anatomy and physiology, basic nutrition, exercise measurements and prescription, exercise physiology, program management and promotion, and safety. Upon approval of their supervised setting, each student functions and contributes as a staff member for 225 hours.

HPE 250  First Aid  2 credits
Designed to present a basic study of safety and accidents, and instruction in the application of emergency first aid. This course meets the certification requirements for standard First Aid and CPR as offered by the American Red Cross. 2 lecture hours

HPE 253  CPR for the Professional  1 credit
American Red Cross CPR for police, fire personnel, health care providers, safety officers, lifeguards, EMTs, paramedics, and other rescue personnel. Successful completion earns the American Red Cross CPR For The Professional Rescuer certification. 1 lecture hour

HRA—Heating, Refrigeration and Air Conditioning

HRA 101  Principles of Refrigeration / Air Conditioning I  2 credits
Corequisite: MAT 037 (or MAT 037A and 037B) or equivalent proficiency
Fundamental principles of pressure and temperature relationships, heat transfer, and heating and cooling concepts. Specific topics include leak detection, types of refrigerants, piping materials, and connections. [Fall offering] 1 lecture/2 laboratory hours

HRA 102  Principles of Refrigeration / Air Conditioning II  2 credits
Prerequisite: HRA 101
Corequisite: EET 130 or equivalent
Fundamental operating principles of compressors, condensers, and evaporators. Specific topics include types of metering devices, general accessory configuration, and procedures for charging and evaluating systems. [Fall offering] 1 lecture/2 laboratory hours

HRA 103  Refrigeration / Air Conditioning Electrical Controls  4 credits
Prerequisites: EET 130, HRA 102
Examines types and application of various electromechanical devices such as motors, contractors, overload devices, thermostats, controls, and relays as well as various types of test and metering equipment. 2 lecture/4 laboratory hours

HRA 104  Domestic Heating and Air Conditioning Systems  4 credits
Prerequisite: HRA 103
Operating fundamentals for the diagnosis and repair of various domestic heating and cooling units including window and central units, refrigerators, freezers, gas furnaces, and heat pumps. 2 lecture/4 laboratory hours
HRA 201 Concepts of Heating and Cooling 4 credits
Prerequisites: MAT 037 (or MAT 037A and 037B) or equivalent proficiency, HRA 102
Addresses computations involving the use and size of various heating and cooling systems, principles of heating, flow and energy, heat pump systems, and air distribution. [Fall offering] 3 lecture/3 laboratory hours

HRA 202 Light Commercial Systems I 2 credits
Prerequisites: EET 130, HRA 103, HRA 104
Corequisite: HRA 203
Explores electrical and mechanical component configurations, including wiring and controls, for light commercial systems. 1 lecture/2 laboratory hours

HRA 203 Light Commercial Systems II 2 credits
Prerequisites: EET 130, HRA 104
Corequisite: HRA 202
Study of electromechanical light commercial system operation, diagnosis and repair, including piping configurations, defrost systems, pressure switches, and pressure regulators. 1 lecture/2 laboratory hours

HRA 205 Heavy Commercial Systems 4 credits
Prerequisite: HRA 104
Operation, maintenance, diagnosis, and repair of heavy commercial systems including electrical controls, mechanical components, and electrical circuitry. [Fall offering] 1 lecture/4 laboratory hours

HRA 227 Cost Estimating 3 credits
Prerequisites: ENT 116, MAT 110
Detailed study of the materials, labor, equipment, overhead, and profit in the field of heating, refrigeration and air conditioning. Intended primarily for students in the Heating, Refrigeration and Air Conditioning program, but also suitable for the Mechanical Engineering Technology program. [Occasional offering] 3 lecture hours

IST 033 Tech Studio 2 credits
Prerequisite: instructor or advisor permission
An introductory computer technology course for students who have had little or no exposure to computers. Topics include the basics of Windows, the Internet, word processing, multimedia, and e-mail. Students create a Web-based ePortfolio to showcase their coursework. 1 lecture/2 laboratory hours

IST 101 Computer Concepts with Applications 3 credits
Prerequisite: reading proficiency
Corequisite: MAT 037 (or MAT 037A and 037B)
A computer literacy course that addresses hardware, software, networking, databases, information literacy, and ethics issues. Lab time includes exposure to a popular PC operating system, Web searching, as well as word processing, database, spreadsheet, and presentation software applications. 2 lecture/2 laboratory hours

IST 102 Computer Concepts with Programming 3 credits
Prerequisites: ENG 034; MAT 037 (or MAT 037A and 037B) or equivalent proficiency
An introduction to computer literacy including a programming laboratory. Lectures cover the Internet; software; system components; peripherals; communications; databases; security, ethics, and privacy; programming languages; and enterprise computing. The laboratory covers forms, menus, decisions, loops, arrays, searching, the user interface, and database programming with Java. 2 lecture/2 laboratory hours

IST 107 Introduction to C/C++ Programming 3 credits
Prerequisites: proficiency in basic algebra, MAT 037 (or MAT 037A and 037B)
By programming to solve problems in C/C++, students gain an appreciation for the role that computers and programs play in today's society. Topics include programming in a traditional environment, variables, methods, decisions, repetition, arrays, and object-orient programming. Extensive laboratory exercises reinforce lecture concepts. 1 lecture/4 laboratory hours

IST 108 Introduction to Programming with Mobile Application Development 4 credits
Prerequisite: MAT 037 or 042, or proficiency in basic algebra
Overview of various mobile platforms and development environments. Students learn how to create Android mobile applications using App Inventor, a visual programming language. Fundamental programming concepts and structures introduced include variables, selection, iteration, functions, lists, and event-driven programming. 3 lecture/2 laboratory hours

IST 109 Introduction to Programming 3 credits
Prerequisites: proficiency in basic algebra, MAT 037 (or MAT 037A and 037B)
Introduces fundamental programming structure, tools and documentation, including how to design interfaces and develop Task Object Event (TOE) and Object Properties and Settings charts, hierarchy charts, pseudocode, and flowcharts. Problem-solving techniques and program design using logic control structures of sequence, selection, iteration, arrays, and sequential files are emphasized in laboratory exercises using VB.NET. 2 lecture/2 laboratory hours

IST 123 Programming in Visual Basic.NET 3 credits
Prerequisite: IST 109
Overview of Visual Basic.NET language to create event-driven programming applications to be run in a Windows environment. Develops object-oriented solutions for a variety of problems in personal and business computing. 2 lecture/2 laboratory hours

IST 140 The Internet and Technology 3 credits
Prerequisite: computer proficiency
Introduction to Internet technology and the use of the World Wide Web as a tool. Topics include Internet and Web history, client-server networks, Web browsers, search engines and queries, multimedia, electronic commerce, social networking utilities, electronic mail, and computer security. Students design a Web page using HTML. 2 lecture/2 laboratory hours

IST 143 XHTML, CSS, and Website Hosting 4 credits
Prerequisite: IST 101 or equivalent computer proficiency
Students install software and applications to establish a Microsoft operating system based server using IIS and a Linux operating system using Apache Web Server. Following an introduction to HTML, students develop Web pages and websites using xhtml, CSS, and JavaScript. Requires a PC and Internet access outside of class. 2 lecture/3 laboratory hours
IST 209  Project Management Concepts  3 credits
Cultivates strategies to orchestrate carefully designed action plans to complete projects successfully, often incorporating complex, dynamic and changing requirements. Explores the management of technology, people, and change to achieve goals, reach targets, and deliver the project on time and within budget.

IST 223  Topics in Advanced Programming  3 credits
Prerequisite: IST 123
Incorporates programming, problem solving, programming logic, and design techniques. Students acquire advanced programming skills such as accessing and updating data in a relational database and developing applications using PL/SQL.

IST 243  Scripting and MySQL for the World Wide Web  3 credits
Prerequisites: IST 143, MAT 140 or higher
Reviewing skills from IST 143, students establish individual Linux/Apache servers, then proceed to develop static and dynamic Web pages using Perl and several Perl variants, PHP, and Python. Includes an introduction to MySQL and the development of Web pages that update, read, and display information in a database.

IST 251  Management of Computer Technology  3 credits
Prerequisite: completion of 30 credits toward Information Systems or Information Technology degree program
Explores solutions to the challenges facing a typical computer technology manager, including project life-cycles, security, access, end-user computing, project planning, scheduling, staffing, employee development, and external threats to private computers.

IST 253  Database Concepts  3 credits
Prerequisite: IST 102 or IST 109
Covers relational database technology and how to apply it in solving basic and advanced database problems and cases. Provides the foundation for the advanced study of individual database management systems, electronic commerce, and enterprise computing.

IST 256  Systems Analysis  3 credits
An introduction to systems analysis and design, including analyzing the business case, requirements modeling, and development strategies. Additionally covers output and user interface design, data design, systems architecture and implementation, and systems operation, support, and security.

IST 259  Project Management  4 credits
How to select, initiate, operate, and control all types of projects, including how to manage risks and uncertainties. Equip students with the quantitative skills, knowledge of organizational issues, and insights into human behavior that are needed for effective project management.

IST 260  SQL Server Database Design  4 credits
Covers user-defined functions and constraints, database methodologies including OLAP (Online Analytical Processing) and OLTP (Online Transaction Processing) issues, and SQL Server. Additionally covers the relational database model, normalization issues, and ensuring data integrity through the use of views, triggers, and stored procedures.

IST 261  SQL Server System Administration  4 credits
Prerequisite: IST 260
Covers the concepts and skills required for support of SQL Server and Microsoft Certified Database Administration (MCDBA) certification: backing up and restoring databases, setting up and managing users, managing database security, managing the replication environment, tuning the database system, and troubleshooting any problems that arise.

IST 262  Oracle SQL  4 credits
Prerequisite: IST 109
Introduces Oracle services, including writing SQL statements, creating databases, manipulating data and tables, working with log files, and performing general database administration. Assists students with preparing for series of examinations leading to the Oracle Certified Associate (OCA) Certificate.

IST 263  Database Administration I  4 credits
Prerequisite: IST 262
Addresses Oracle Database software installation along with new database creation and administration. Students configure the database to support an application, create users, define storage structures, set up security, design a backup and recovery strategy, and monitor the database to ensure its smooth operation.

IST 264  Database Administration II  4 credits
Prerequisite: IST 263
Combines training, experience, and testing to ensure a strong foundation and expertise in the industry's most advanced database management system. Focus includes an Oracle database configuration for multilingual applications, the Oracle Recovery Management and Flashback technology, and database performance monitoring tools.

IST 298  Information Systems Cooperative Education  2 credits
Prerequisite: final course for degree in Information Technology
Integration of classroom study with specific planned period of learning through job experience. Based on individualized learning contract.

IST 281  Information Systems Cooperative Education I  1 credit
Prerequisite: Cooperative Education 2 credits
Continuation of IST 298. The student earns one credit for a minimum of 90 hours of work experience for each course.

IST 283  Information Systems Cooperative Education III  1 credit
Prerequisite: IST 298
Continuation of IST 298. The student earns one credit for a minimum of 90 hours of work experience for each course.

ITA—Italian

Note: Students who have taken two or more years of a foreign language, and have done so in the last two years, should begin that language at the 200 level or switch to a new language. If there is doubt, placement will be determined by testing or consultation with the academic division.
**COURSES**

**ITA 102**  
Beginning Italian II  
3 credits  
- **Prerequisite:** ITA 101 with a minimum C grade or permission of instructor  
The second in a sequence of courses designed for students with little or no prior knowledge of Italian. Spoken communication in Italian is both the end goal and the means of instruction. Emphasizes the four communicative skills in a culturally authentic context. Reading and writing are assigned out of class to facilitate effective listening and speaking practice in class. Basic grammar skills are also introduced.  

**ITA 201**  
Intermediate Italian I  
3 credits  
- **Prerequisite:** ITA 102 with a minimum C grade or permission of instructor  
The first in a sequence of courses designed for students with a mid to high novice level of competency in Italian. Spoken communication in Italian continues to be the end goal and the means of instruction. The four communicative skills of reading, writing, listening and speaking are applied to discussions and debates involving Italian culture, politics, and history. Fundamental grammar points are reviewed.  

**ITA 202**  
Intermediate Italian II  
3 credits  
- **Prerequisite:** ITA 201 with a minimum C grade or permission of instructor  
The second in a sequence of courses designed for students with a mid to high novice level of competency in Italian. Spoken communication in Italian continues to be the end goal and the means of instruction. The four communicative skills of reading, writing, listening and speaking are applied to discussions and debates involving Italian culture, politics, and history. Fundamental grammar points are reviewed.  

**LAT—Latin**

**LAT 101**  
Beginning Latin I  
3 credits  
- **Prerequisite:** LAT 102 with a minimum C grade or permission of instructor  
The first in a sequence of courses designed for students with little or no prior knowledge of Latin. Reading comprehension of literary and scholarly texts in Latin being the end goal, emphasizes the communicative skills of reading and writing based on culturally authentic texts. Grammar is thoroughly introduced and analyzed. Some spoken communication in Latin is practiced.  

**LAT 102**  
Beginning Latin II  
3 credits  
- **Prerequisite:** LAT 101 with a minimum C grade or permission of instructor  
The second in a sequence of courses designed for students with little or no prior knowledge of Latin. Reading comprehension of literary and scholarly texts in Latin being the end goal, emphasizes the communicative skills of reading and writing based on culturally authentic texts. Grammar is thoroughly introduced and analyzed. Some spoken communication in Latin is practiced.  

**LAT 201**  
Intermediate Latin I  
3 credits  
- **Prerequisite:** LAT 202 with a minimum C grade or permission of instructor  
The first in a sequence of courses designed for students with a mid to high novice level of reading competency in classical Latin. Reading comprehension of literary and scholarly texts in Latin continues to be the end goal. With Latin being the language of instruction for at least half of class time, some conversation is practiced.  

**LAT 202**  
Intermediate Latin II  
3 credits  
- **Prerequisite:** LAT 201 with a minimum C grade or permission of instructor  
The second in a sequence of courses designed for students with a mid to high novice level of reading competency in classical Latin. Reading comprehension of literary and scholarly texts in Latin continues to be the end goal. With Latin being the language of instruction for at least half of class time, some conversation is practiced.  

**JPN—Japanese**

**JPN 101**  
Beginning Japanese I  
3 credits  
- **Prerequisite:** JPN 102 with a minimum C grade or permission of instructor  
The first in a sequence of courses designed for students with little or no prior knowledge of Japanese. Spoken communication in Japanese is both the end goal and the means of instruction. Emphasizes the four communicative skills in a culturally authentic context. Reading and writing are assigned out of class to facilitate effective listening and speaking practice in class. Basic grammar skills are also introduced.  

**JPN 102**  
Beginning Japanese II  
3 credits  
- **Prerequisite:** JPN 101 with a minimum C grade or permission of instructor  
The second in a sequence of courses designed for students with little or no prior knowledge of Japanese. Spoken communication in Japanese is both the end goal and the means of instruction. Emphasizes the four communicative skills in a culturally authentic context. Reading and writing are assigned out of class to facilitate effective listening and speaking practice in class. Basic grammar skills are also introduced.  

**LEG—Legal Studies**

**LEG 129**  
Role of the Paralegal  
3 credits  
Study of the relationship among paralegals, attorneys, and clients particularly as it relates to law office economics, legal ethics, and confidentiality. Stages in a civil lawsuit and criminal prosecution are examined; legal interviewing, investigation, and orientation to legal research are stressed.  

**LEG 130**  
Civil Litigation I  
3 credits  
Study of the law of torts designed to acquaint the paralegal with various forms of tort actions encountered in the law office.  

**LEG 132**  
Civil Litigation II  
3 credits  
- **Prerequisite:** ENG 101 with a minimum C grade  
Overview of the litigation process covering the pleadings of cases from initial complaint through ultimate judgment, with emphasis on tasks performed by paralegals. Addresses medical terminology and rules of evidence.  

**LEG 133**  
Legal Research and Writing  
3 credits  
- **Prerequisite:** ENG 101  
Study of basic skills often required in the general practice of law. Utilizing computer-assisted legal research, includes an introduction to several common kinds of legal writing with an emphasis on that which the paralegal encounters on a day-to-day basis in a law office.
LIB—Library Technology

LIB 101 The Library / Media Center: an Introduction 3 credits
Corequisite: ENG 101
Explores the range of materials and services available in libraries for lifelong learning along with the operation and organization of libraries and information centers. Provides practical experience in using basic resources and new technologies. 3 lecture hours

LIB 103 Library Skills 1 credit
Survey of library services and resources, both print and nonprint. Emphasizes research strategies to locate information for college reports and term papers, involving the online catalog, reference sources, Web-based resources, print indexes, and library equipment. 2 lecture/2 laboratory hours (5 weeks)

MAT—Mathematics

Note: Students should check mathematics course recommendations with the college or university to which they intend to transfer. The receiving institution always makes the final decision concerning transferability of credits. Information about mathematics course equivalencies among New Jersey institutions is available at www.njtransfer.org

Initial selection of a mathematics course is determined by results of college skills placement testing (see page 8). Students who have completed math courses at another college must present transcripts and course outlines or syllabi. Consult mathematics faculty for advice.

Applicability of credits for courses below the 100 level toward degree requirements is limited. Consult an academic advisor. All prerequisite courses must be passed with a minimum C grade before enrolling in any subsequent mathematics course.

MAT 032 Beginning Algebra – Accelerated 2 credits
Prerequisite: appropriate placement test score
Foundation mathematics course designed for students with experience in algebra but who need to strengthen their mastery of the fundamentals. Topics include exponents, polynomials, factoring, linear and quadratic equations, rational and radical expressions, and graphing linear equations. [Foundation course does not fulfill mathematics elective requirement.] 2 lecture hours

MAT 033 Pre-Algebra 4 credits
Developmental mathematics course designed for students needing a review of basic arithmetic, including an introduction to algebra. Topics include operations with whole numbers, decimals, fractions, percents, ratio and proportion, signed numbers, and an introduction to algebraic equations. [Foundation course does not fulfill mathematics elective requirement.] 4 lecture hours

MAT 037 Beginning Algebra 4 credits
Prerequisite: MAT 033 with a minimum B- grade or appropriate placement test score
Foundation mathematics course designed for students with experience in algebra but who need to strengthen their mastery of the fundamentals. Topics include exponents, polynomials, factoring, graphing first-degree equations, quadratic equations, rational expressions, and radical expressions. [Foundation course does not fulfill mathematics elective requirement.] 4 lecture hours

MAT 041 Foundation Math I 3 credits
Developmental mathematics course designed for students needing an introduction to algebra. Topics include whole numbers, fractions, decimals, percentages, and integer operations. Students work through the material in self-paced mastery-based modules in a lab setting. [Foundation course does not fulfill mathematics elective requirement.] 6 laboratory hours

MAT 042 Foundation Math II 3 credits
Prerequisite: MAT 041
Developmental mathematics course designed for students needing an introduction to algebra. Topics include inequalities, linear models and graphing, exponents, and polynomials. Students work through the material in mastery-based modules in a lab setting. Those who complete this course may register for MAT 108, MAT 110, MAT 115, or MAT 120. [Foundation course does not fulfill mathematics elective requirement.] 6 laboratory hours
MAT 043  Foundation Math III  1 credit
**Prerequisite:** MAT 042
Developmental mathematics course designed for students needing additional topics in algebra. Students work through the material – operations on rational and radical expressions, systems of equations, and linear models – in mastery-based modules in a lab setting. Those who complete this course may register for MAT 135 or MAT 140. [Foundation course does not fulfill mathematics elective requirement.]  2 laboratory hours

**GenEd** Mathematics

MAT 108  Topics in Mathematics  3 credits
**Prerequisite:** MAT 037 (or MAT 037A and 037B) or MAT 042 or appropriate placement test score
Designed to give liberal arts and other non-science/non-technical majors an overview and basic working knowledge of three mathematics topics/applications encountered on a daily basis: probability, data analysis, and consumer math.  3 lecture hours

**GenEd** Mathematics

MAT 110  Elementary Technical Mathematics  3 credits
**Prerequisite:** MAT 037 (or MAT 037A and 037B) or MAT 042 or appropriate placement test score
Designed for specific technology programs. Topics in arithmetic, geometry, algebra, and elementary trigonometry are covered with emphasis on their application to technology.  3 lecture hours

**GenEd** Mathematics

MAT 115  Algebra and Trigonometry I  3 credits
**Prerequisite:** MAT 037 (or MAT 037A and 037B) or MAT 042 or appropriate placement test score
Primarily for students majoring in engineering technology related programs. Algebraic topics discussed include systems of linear equations, determinants, factoring, trigonometric functions and their graphs, radian measure, solutions of triangles, and application problems.  3 lecture hours

**GenEd** Mathematics

MAT 116  Algebra and Trigonometry II  3 credits
**Prerequisite:** MAT 037 with a minimum C grade or permission of the Mathematics Department
Continuation of MAT 115. Topics include complex numbers, logarithmic and exponential functions, solving systems of nonlinear equations, trigonometric identities and equations, inverse trigonometric functions, and analytic geometry.  3 lecture hours

**GenEd** Mathematics

MAT 120  Mathematics for Liberal Arts  3 credits
**Prerequisite:** MAT 037 (or MAT 037A and 037B) or MAT 042 or appropriate placement test score
Primarily for students in non-science/technical majors, emphasizes mathematical systems, reasoning, and mathematical structures. Includes sets, symbolic logic, numeration systems, number systems in other bases, growth models, and geometric structures.  3 lecture hours

**GenEd** Mathematics

MAT 135  Intermediate Algebra with Applications  4 credits
**Prerequisite:** MAT 037 (or MAT 037A and 037B) or MAT 043 with a minimum C grade or appropriate placement test score
Topics include function notation; linear, quadratic, and absolute value functions and equations; rational expressions and equations; rational exponents and equations; radicals and radical equations; graphing of linear, quadratic, and polynomial functions; and inequalities. [grade of B- or better is strongly recommended to proceed to MAT 146]  4 lecture hours

**GenEd** Mathematics

MAT 140  Applied College Algebra  4 credits
**Prerequisite:** MAT 037 (or MAT 037A and 037B) or MAT 043 with a minimum C grade or appropriate placement test score
Designed for students majoring in disciplines involving less intensive math, for which a more conceptual understanding of college algebra is appropriate. Employing extensive examples from a variety of fields, topics include the study of linear, exponential, logarithmic, polynomial and rational functions. Not intended as preparation for Pre-Calculus or Calculus.  3 lecture/1 laboratory hours

**GenEd** Mathematics

MAT 146  Pre-Calculus  4 credits
**Prerequisite:** MAT 135 with a minimum C grade or appropriate College Level Math placement test score
In-depth study of polynomial, rational, exponential, logarithmic, trigonometric and inverse trigonometric functions, equations, and identities; systems of equations including matrices; extensive use of graphing calculators. [grade of B- or better is strongly recommended to proceed to MAT 151]  4 lecture hours

**GenEd** Mathematics

MAT 149  Calculus for Social Sciences or Business  4 credits
**Prerequisite:** MAT 146 with a minimum C grade or appropriate College Level Math placement test score
Designed for students of business and the social sciences. Application-based topics include the fundamental techniques of differentiation and integration of algebraic, exponential and logarithmic functions, elementary differential equations, maxima-minima, functions of several variables, Lagrange multipliers, and double integration.  4 lecture hours

**GenEd** Mathematics

MAT 151  Calculus I  4 credits
**Prerequisite:** MAT 146 with a minimum C grade or appropriate College Level Math placement test score
First course in the standard integrated calculus sequence. Topics include differentiation of algebraic, exponential, logarithmic, trigonometric, hyperbolic, and inverse trigonometric functions. Applications include curve sketching, related rates, maxima, minima, and approximations as well as integration and applications of the definite integral.  4 lecture hours

**GenEd** Mathematics

MAT 152  Calculus II  4 credits
**Prerequisite:** MAT 151 with a minimum C grade or appropriate College Level Math placement test score
Consulation with mathematics faculty member
Continuation of MAT 151. Topics include techniques of integration, areas, volumes, arc length, surface area, improper integrals, Simpson’s Rule, infinite sequences, MacLaurin and Taylor series, differentiation of polar and parametric equations, conic sections in rectangular and polar form, and rotation of axes.  4 lecture hours

**GenEd** Mathematics

MAT 200  Statistics for Social and Health Sciences I  3 credits
**Prerequisite:** MAT 135 with a minimum C grade or appropriate College Level Math placement test score or permission of department
An applied statistics course for the social sciences, nursing, etc. Topics include data production and access, one-variable data analysis, correlation and regression, normal and binomial distributions, sampling distributions, estimation and tests of hypotheses for a single sample. MINITAB statistical software is used to calculate statistics and generate graphs.  3 lecture hours
MAT 201  Probability and Statistics for Science and Engineering  4 credits
Prerequisite: MAT 151 or MAT 149 with a minimum C grade or permission of department
Calculus-based course designed for engineers, computer scientists and science majors. Topics include one variable data analysis, sample regression analysis, probability, discrete and continuous distributions, random samples, confidence intervals and hypothesis testing, contingency tables, as well as one factor and factorial experimental design.  4 lecture hours

MAT 205  Statistics for Social and Health Sciences II  3 credits
Prerequisite: MAT 200 with a minimum C grade or permission of department
Second-semester course in an academic year sequence for social sciences, humanities, nursing and related fields. Employs statistical software for studies of probability, inference for two parameters, inference for regression and correlation, analysis of variance, analysis of categorical data, and nonparametric statistics. [Spring offering]  3 lecture hours

MAT 208  Linear Algebra  4 credits
Prerequisite: MAT 151 with a minimum C grade and consultation with mathematics faculty member
An introduction to linear algebra topics including linear equations and matrices, determinants, independence and basis, vector spaces and subspaces, the four fundamental subspaces, orthogonality, linear transformations and eigenvalues and eigenvectors. Applications of linear algebra are included.  4 lecture hours

MAT 251  Calculus III  4 credits
Prerequisite: MAT 152 with a minimum C grade and consultation with mathematics faculty member
Continuation of MAT 152. Includes parametric equations, vectors, solid analytic geometry, partial derivatives, multiple integrals, and topics in vector calculus including Green's theorem and Stoke's theorem.  4 lecture hours

MAT 252  Differential Equations  4 credits
Prerequisite: MAT 152 with a minimum C grade and consultation with mathematics faculty member
Topics include solutions of ordinary differential equations, solving linear differential equations of higher order using differential operators, methods of undetermined coefficients and variation of parameters. Strong emphasis on solving differential equations using the Laplace transform, Cauchy-Euler equation, infinite series, and matrix methods. Applications to geometry and physical science are discussed.  4 lecture hours

MKT 101  Principles of Marketing  3 credits
Prerequisite: ENG 101
A study of the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services that satisfy individual and organizational objectives.  3 lecture hours

MKT 106  Introduction to Sports Marketing  3 credits
Prerequisite: ENG 101
Exploration of the comprehensive nature of sports marketing from a strategic marketing perspective. Examination of basic and detailed concepts covers such areas as sponsorships, branding, promotions, public relations, licensing, and consumer research and behavior, including their effects on professional, intercollegiate and other areas of sport.  3 lecture hours

MKT 230  Principles of Retailing  3 credits
Prerequisite: MKT 101
Introduction to the field of retailing. Issues include establishment of a store, store location, layout, organization and planning, buying, merchandising, promotion, credit, control and personnel.  3 lecture hours

MLT—Medical Laboratory Technology
The minimum passing grade for all MLT courses is C.

MLT 104  Immunology and Immunohematology  4 credits
Prerequisite: MLT 112 or permission of instructor
Basic theory and concepts of antigen-antibody reactions. Covers relationship of infection and immunity; theory of blood group antigens and their inheritance; and methods of performing donor selection, blood groupings, compatibility tests, and antibody screening.  3 lecture hours/3 laboratory hours

MLT 111  Hematology  4 credits
Prerequisite: MLT 112 or permission of instructor
Examines hematology and blood coagulation, including blood cell maturation, physiology, and morphology; hemostasis theory and procedures. Laboratory component develops laboratory skills related to lecture topics.  2 lecture/3 laboratory hours

MLT 112  Principles of Medical Laboratory Technology  3 credits
Prerequisite: BIO 102 or BIO 104 or permission of instructor
Basic principles, techniques and vocabulary applicable to medical laboratory technology. Emphasizes specimen collection and preservation; urinalysis and clinical microscopy; phlebotomy; introduction to serology; and lab information systems. The lab component develops laboratory skills related to lecture topics.  3 lecture/3 laboratory hours

MLT 200  Clinical Chemistry  4 credits
Prerequisite: MLT 112 or permission of instructor
Basic principles and theory of biochemical and analytical tests and procedures used in the analysis of clinical specimens. Emphasizes the correlation of specimen processing as well as analysis of test results and quality control data in routine manual and automated clinical chemistry procedures.  4 lecture hours

MLT 205  Diagnostic Microbiology  6 credits
Prerequisite: MLT 200 or permission of instructor
Principles and methods used in clinical microbiology including isolation, identification, and antibiotic susceptibility testing of pathogenic bacteria. Introduction to medical parasitology, mycology and virology. Laboratory component develops the technical and critical thinking skills used to evaluate clinical microbiology specimens.  5 lecture/3 laboratory hours

MLT 215  Clinical Practice  10 credits
Prerequisite: MLT 205 or permission of instructor
Clinical practice in an affiliated facility under the direction and supervision of laboratory educators. Students conduct routine analytical procedures, develop their laboratory skills, apply knowledge gained in the program, and demonstrate entry-level career competencies.  720 clinical hours
MUS—Music

Appreciation and History

- **Humanities**
  - **MUS 103** Introduction to Music 3 credits
    Enhances the student’s knowledge and enjoyment of a variety of music styles and historical contexts through listening and discussion. Requires attendance at live concerts. No prior musical training necessary. 3 lecture hours

- **Humanities / Diversity and Global Perspective**
  - **MUS 155** History of Jazz and Blues 3 credits
    Study of the evolution of jazz and blues from their origins in West African music and dance to their development as major 20th century art forms. Examines the significant stylistic phases of jazz from early blues and ragtime through swing and be-bop to avant garde and fusion. Also explores the impact of the African American tradition on contemporary rock and pop music. 3 lecture hours

- **Humanities / Diversity and Global Perspective**
  - **MUS 156** History of American Pop Music 3 credits
    Analytical and historical survey of American popular music with an emphasis on the period from 1950 to the present. Students develop an understanding of the cultural, social, technological, and musical forces shaping each decade covered. Students apply critical analysis to musical styles, instrumentation, and song structure in addition to issues of race, ethnicity, social class, and gender as formative factors influencing its evolution. 3 lecture hours

Music Theory

- **MUS 105** Fundamentals of Music Theory 3 credits
  Offers the student with no prior musical training an introduction to the basics of music theory. Topics include notation of pitch and rhythm, scale structure, key signatures in major and minor keys, plus chord construction and voice leading. [Fall offering] 2 lecture/2 laboratory hours

- **MUS 127** Music Theory I 3 credits
  prerequisite: MUS 105 or permission of department
  Corequisite: MUS 168
  Topics include more advanced chord construction, figured bass, harmonic analysis, the principles and procedures of four-part writing emphasizing the primary triads and their inversions, as well as non-harmonic tones. Reinforced through ear training and sight singing. [Spring offering] 2 lecture/2 laboratory hours

- **MUS 128** Music Theory II 3 credits
  prerequisite: MUS 127
  Corequisite: MUS 168
  Completion of the diatonic system. Harmonic principles and procedures introduced in MUS 127 are expanded to include application to the supertonic, leading tone, mediant and submediant harmonies in both triad and seventh chord form. Introduces more advanced part-writing, as well as harmonic and structural analysis of 18th and 19th century repertoire. Reinforced through aural skills training and keyboard harmony. [Fall offering] 2 lecture/2 laboratory hours

- **MUS 167** Musicianship I 1 credit
  Corequisite: MUS 127
  Progressive exercises in sight singing, ear training in the form of melodic, rhythmic and harmonic dictation, as well as the practice of keyboard harmony. Emphasis on diatonic materials and the primary triads. Coordinated with conceptual materials presented in MUS 127. 2 laboratory hours

- **MUS 168** Musicianship II 1 credit
  prerequisite: MUS 128
  Corequisite: MUS 267
  Continuation of studies begun in MUS 167 with more advanced exercises in sight singing, ear training and keyboard harmony as well as expanded use of the diatonic system including all diatonic triads. Coordinated with conceptual materials presented in MUS 128. 2 laboratory hours

- **MUS 224** Music History and Literature I – Antiquity Through Baroque 3 credits
  prerequisite: MUS 103 and MUS 105 or equivalent experience
  Study of the evolution of Western European music from its ideological and practical origins in ancient Greece and Rome through the Medieval, Renaissance, and Baroque periods. In the context of sociohistorical forces and events affecting its development. Basic music theory background desirable. 3 lecture hours

- **MUS 225** Music History and Literature II – Baroque Through Modern 3 credits
  prerequisite: MUS 103 and MUS 105 or equivalent experience
  Continued study of the evolution of Western European music from the classical period, with its roots in the Enlightenment and culmination in Romanticism, through its variegated manifestations in the 20th century. Basic music theory background desirable. 3 lecture hours

Piano Class

- **MUS 121** Piano Class I 1 credit
  Fundamentals of piano playing, covers music reading, chords, various accompaniment styles, coordination of both hands, and sight-reading skills. Group instruction is given via an electro-piano lab. College pianos are available for practice. No prior piano instruction necessary. 2 laboratory hours

- **MUS 122** Piano Class II 1 credit
  prerequisite: MUS 121
  Continuation of playing skills and activities initiated in MUS 121 2 laboratory hours

- **MUS 222** Piano Class III 1 credit
  prerequisite: MUS 122
  Continuation of MUS 122. Explores various periods of keyboard literature as well as increasingly difficult technical skills, sight reading, and transposing. 2 laboratory hours
## COURSES

### MUS 222 Piano Class IV

**Prerequisite:** MUS 221

Continuation of MUS 221.

1 credit

| 2 laboratory hours |

### Guitar Class

**MUS 142 Guitar Class I**

Opportunity to learn to play the guitar; no previous experience necessary. Covers basic chords, song accompaniment, music reading, and pertinent music forms. Some acoustic guitars are available for student use in class.

1 credit

| 1 lecture/1 laboratory hour |

### College Chorus

**MUS 101 Chorus I**

Opportunity to sing choral repertoire in a variety of genres from all periods of music history. Rehearsals culminate in one or two public performances each semester. Some prior singing experience required.

2 credits

| 3 class hours |

**MUS 102 Chorus II**

Continuation of MUS 101.

2 credits

| 3 class hours |

**MUS 201 Chorus III**

Continuation of MUS 102.

2 credits

| 3 class hours |

**MUS 202 Chorus IV**

Continuation of MUS 201.

2 credits

| 3 class hours |

### Chamber Ensemble

**MUS 111 Chamber Ensemble I**

Opportunity to explore, through rehearsal and performance, traditional chamber music repertoire drawn from a variety of historical periods. The student is trained in the proper phrasing, articulation, and dynamics specific to each style. Open to players of all appropriate instruments.

2 credits

| 3 class hours |

**MUS 112 Chamber Ensemble II**

Continuation of MUS 111.

2 credits

| 3 class hours |

**MUS 211 Chamber Ensemble III**

Continuation of MUS 112.

2 credits

| 3 class hours |

**MUS 212 Chamber Ensemble IV**

Continuation of MUS 211.

2 credits

| 3 class hours |

### Individual Instruction

**MUS 109 Applied Music I**

Private lessons on keyboard, voice, or band/orchestral instrument with a member of the artist-teacher staff. Special fee required.

1 credit

| one-half hour per week |

**MUS 110 Applied Music II**

**Prerequisite:** MUS 109

Continuation of private studies. Special fee required.

1 credit

| one-half hour per week |

**MUS 209 Applied Music III**

**Prerequisite:** MUS 110

Continuation of private studies. Special fee required.

1 credit

| one-half hour per week |

**MUS 210 Applied Music IV**

**Prerequisite:** MUS 209

Continuation of private studies. Special fee required.

1 credit

| one-half hour per week |

### Jazz Studies

**MUS 119 Jazz Band I**

**Prerequisites:** ability to play a jazz band instrument and to read music notation

Opportunity to explore classic jazz literature through rehearsal and performance. Repertoire is selected from standards of the swing era, be-bop, to contemporary funk and fusion with an emphasis on proper articulation, groove, and dynamics specific to each style.

2 credits

| 3 class hours |

**MUS 120 Jazz Band II**

Continuation of MUS 119.

2 credits

| 3 class hours |

**MUS 219 Jazz Band III**

**Prerequisite:** MUS 120 with a minimum C grade

Continuation of MUS 120.

2 credits

| 3 class hours |

**MUS 220 Jazz Band IV**

**Prerequisite:** MUS 219 with a minimum C grade

Continuation of MUS 219.

2 credits

| 3 class hours |

**MUS 151 Jazz Improvisation I – Blues**

**Prerequisites:** ability to play an instrument and to read musical notation

(MUS 151 and MUS 152 need not be taken in sequence.) Introductory-level course emphasizing use of the Mixolydian mode and the blues scale as applied to the dominant 7th family chords. Explores the twelve-bar blues and related forms as vehicles for improvisation with an emphasis on swing and funk rhythms.

2 credits

| 1 lecture/2 laboratory hours |

**MUS 152 Jazz Improvisation II – Modal**

**Prerequisites:** ability to play an instrument and to read musical notation

(MUS 152 may be taken before MUS 151.) Introductory-level course presenting the conceptual and practical rudiments of the jazz language by focusing on two modes, Ionian and Dorian, as they apply to the major and minor families of chords, respectively. Emphasizes Latin and rhythm.

2 credits

| 1 lecture/2 laboratory hours |

**MUS 223 Jazz Keyboard Harmony and Improvisation**

**Prerequisite:** MUS 221

Introductory course presenting the fundamentals of jazz harmony, chord progressions, scales, and tools for improvisation at the keyboard.

1 credit

| 2 laboratory hours |

### Music Production and Business

**MUS 123 Music Business**

Overview of the music industry including copyright law, publishing, contracts, management, licensing, and merchandising. Students gain an overall understanding of the people, technologies, and laws that affect all aspects of the music business, culminating in a discussion of career opportunities.

3 credits

| 3 lecture hours |

**MUS 235 Music Composition in the Virtual Studio**

**Prerequisites:** CMN 253, MUS 127

Strategies for writing, recording, and producing music in the context of an integrated MIDI/digital audio production environment. Topics include MIDI data entry, recording live sound sources, editing, plug-ins, mixing, mastering, digital music production, and generating .wav and .mp3 files. Assignments include creative projects and listening/discussion of relevant “pop” and “art” music.

3 credits

| 2 lecture/2 laboratory hours |
Advanced Studies

MUS 285  Special Studies in Instrumental Music  3 credits
Prerequisites: MUS 128 and MUS 204
and/or permission of music faculty
Opportunity for students who have completed regular course offerings to continue their studies at advanced levels. Individual students and faculty develop a project contract that sets forth objectives, standards of quality, evaluation guidelines, and deadlines. [occasional offering]  3 lecture hours

MUS 286  Special Studies in Choral/Vocal Music  3 credits
Prerequisites: MUS 128 and MUS 204
and/or permission of music faculty
Opportunity for students who have completed regular course offerings to continue their studies at advanced levels. Individual students and faculty develop a project contract that sets forth objectives, standards of quality, evaluation guidelines, and deadlines. [occasional offering]  3 lecture hours

NET—Networking Technology

Note: Students should consult their academic advisor and the college or university to which they intend to transfer regarding networking technology course requirements. The receiving institution always makes the final decision concerning transferability of credits.

NET 102  Introduction to PC Hardware and Software  3 credits
Corequisite: NET 103 recommended
Students learn to install, configure, diagnose, and troubleshoot microcomputer hardware components and various operating systems. Includes an introduction to local area networks, the identification and installation of memory, preventive maintenance, plus coverage of terminology and concepts that will assist students preparing for the A+ Certification exams.  2 lecture/3 laboratory hours

NET 103  IT Essentials  3 credits
Prerequisite: basic computer literacy
Corequisite: NET 102 recommended
A continuation of NET 102. Students learn advanced concepts regarding the installation, configuration, diagnosis, and troubleshooting of microcomputer hardware components and operating systems. Includes coverage of terminology and concepts that will assist students preparing for the Server+ Certification exam.  2 lecture/3 laboratory hours

NET 104  Fundamentals of Computer Networks  3 credits
Prerequisite: basic computer literacy
Fundamentals of data communications theory, network management, connectivity, the OSI model, and internetworking protocols and standards. Covers topologies, architectures, operating systems, security, LAN/WAN components, modem implementation, LAN troubleshooting and support resources, fault tolerance, network adapters, and client-server environments. Assists students preparing for the Network+ Certification exam.  2 lecture/2 laboratory hours

NET 120  Windows Desktop Operating System Administration  3 credits
Prerequisite: basic computer literacy
Students learn to install the Windows desktop OS: create users/groups; administer file/print resources; manage hardware; optimize performance and reliability; configure desktops using control panel, registry, system policies; and configure network protocols and services. Covers resource auditing, data storage management, network monitoring, and security; plus introduction to DNS and Active Directory. Hands-on exercises reinforce Microsoft certification exam objectives.  2 lecture/2 laboratory hours

NET 122  Windows Server Operating System Administration  3 credits
Prerequisites: NET 102 or A+ Certification; NET 104 or Network+ Certification; NET 120 or permission of program coordinator
Students learn to install and configure the Windows server network OS, including overall administration, advanced file system concerns, and active directory services. Covers routing, remote access, network security, fault tolerance, and server and network resource optimization. Introduces application servers and troubleshooting in a network environment. Hands-on exercises reinforce Microsoft certification exam objectives.  2 lecture/2 laboratory hours

NET 124  Network Infrastructure Administration  3 credits
Prerequisite: NET 122
Windows-based focus includes implementing TCP/IP for cross-platform and Internet connectivity, WINS and DNS to resolve hosts on local and remote networks, DHCP to manage address configuration, RAS including dial-up connectivity and virtual private networks, and Internet connection sharing with NAT. Covers securing network communications with certificates, IP security, authentication, and encryption. Hands-on exercises reinforce Microsoft certification exam objectives.  2 lecture/2 laboratory hours

NET 126  Network Directory Services Administration  3 credits
Prerequisite: NET 122
Students plan, configure, and administer a directory services infrastructure. Includes DNS configuration, administering user environments with group policy, remote OS deployment using RIS, and centrally managing users, groups, shared folders, and network resources. Covers implementing and troubleshooting security as well as monitoring and optimizing directory services performance. Hands-on exercises reinforce Microsoft certification exam objectives.  2 lecture/2 laboratory hours

NET 210  Interconnecting Network Devices  3 credits
Prerequisites: NET 102 or A+ Certification; NET 104 or Network+ Certification
Study of the concepts and commands required to configure switches and routers in multiprotocol internetworks. Identifies solutions for small to medium-sized businesses, with procedures to configure multirouter, multigroup internetworks using LAN/WAN interfaces for common routed protocols. Also covers installation, configuration, and troubleshooting essentials required by technicians to install and maintain these devices. Hands-on exercises reinforce Cisco certification exam objectives.  2 lecture/2 laboratory hours

NET 212  Linux  3 credits
Prerequisites: NET 102 or A+ Certification; NET 104 or Network+ Certification
Study of current hardware and software components of two operating system environments: Linux and AS/400. Major concentration is on Linux with an introduction to AS/400. Hands-on lab projects reinforce selected Linux lecture topics.  2 lecture/2 laboratory hours

NET 214  Mastering Linux  3 credits
Prerequisite: NET 212 or permission of course coordinator
In-depth study of the Linux operating system, designed for anyone who has had an introduction to Linux and desires to expand their knowledge and skills. Includes an introduction to writing shell scripts plus attention to system utilities, text processing, and system administrator responsibilities.  2 lecture/2 laboratory hours
NET 230  Advanced Switched Networks  3 credits  
*Prerequisite: NET 104*  
Study of the concepts and commands required to use routing and switching technologies together, including recommended campus network design methodologies. Topics include Layer 2 switching technologies including Spanning Tree, VLAN, frame tagging, and protocols; and Layer 3 routing services including inter-VLAN routing, multilayer switching, Hot Standby Routing Protocol (HSRP), and IP multicast. Hands-on exercises reinforce Cisco certification exam objectives.  
2 lecture/2 laboratory hours

NET 239  WAN Data Communications  3 credits  
*Prerequisites: NET 130, NET 230*  
Covers the technology and terminology required to use routing and switching technologies together in a wide area network (WAN) infrastructure, including advanced IP addressing techniques, NAT, PAT, DHCP, PPP, ISDN, DRR, frame relay, and an introduction to optical networking. Hands-on exercises reinforce Cisco certification exam objectives.  
2 lecture/2 laboratory hours

NET 240  Network Security  3 credits  
*Prerequisite or Corequisite: NET 130; NET 244 recommended*  
Explores security design considerations for enterprise networks through the evaluation of existing and planned technical environments, including identifying security risks and defining security baselines. Topics include controlling resource access using various security techniques. Hands-on exercises reinforce certification exam objectives.  
2 lecture/2 laboratory hours

NET 242  Directory Services Infrastructure Design  3 credits  
*Prerequisites: NET 124, NET 126*  
Analyzes requirements related to the design of a directory services infrastructure, including connectivity and access, security, performance, and end user support. Topics include assessment of the impact on existing systems and processes, creating a forest model and schema modification plan, and defining and naming domains. Hands-on exercises reinforce Microsoft certification exam objectives.  
2 lecture/2 laboratory hours

NET 244  Network Defense and Countermeasures  3 credits  
*Prerequisite: NET 104 or Network+ Certification*  
Examines the second five domains covered in the International Information Systems Security Certification Consortium’s Common Body of Knowledge, including capturing/analyzing Internet protocol traffic, exploiting protocol weaknesses, packet filtering, password policies, file integrity, securing perimeter routers, firewalls, intrusion detection systems, and “denial of service” strategies. Topics reinforce CISSP/CCIE certification exam objectives.  
2 lecture/2 laboratory hours

NET 288  MS Exchange Server  3 credits  
*Prerequisites: NET 124, NET 126*  
Promotes the skills necessary to administer the Microsoft Exchange Server, involving messaging components, architecture, installation, and management of the Exchange environment. Hands-on exercises reinforce Microsoft certification exam objectives.  
2 lecture/2 laboratory hours

NRS—Nursing

The minimum passing grade for all NRS courses is C.

NRS 101  Entry Into Professional Nursing  1 credit  
*Prerequisites: ENG 101, MAT 037 or higher, and enrollment in the Nursing Science major for the MCCC Nursing program*  
Introduces the pre-nursing student to the profession, including its history. Along with the concept of critical thinking and its application to the nursing process model of decision-making, students are taught study skills to enhance their success in the Nursing program.  
1 lecture hour

NRS 102  Health Assessment Across the Lifespan  2 credits  
*Prerequisites: BIO 103, BIO 104*  
Introduces the new nursing student to health assessment, which is the first step in understanding the nursing process. Focus on the concepts, knowledge, and skills necessary to complete a health assessment for patients in all age groups. Emphasizes the major elements, sequence, and methodology involved.  
1 lecture/2 college laboratory hours

NRS 110  Fundamental Concepts of Nursing  6 credits  
*Prerequisite: formal admission into the Nursing program*  
Introduction to the fundamental concepts and knowledge needed to meet the basic needs of all patients. The nursing process is used as a framework for care delivery as well as concepts from the social, psychological and physical sciences. Includes clinical experiences planned in area health care agencies.  
3 lecture/2 college laboratory/6 clinical hours

NRS 120  Alterations in Health I  3 credits  
*Prerequisite: NRS 110 with a minimum C grade*  
This five-week course presents a continuation of the concepts, knowledge, and skills introduced in NRS 110 with an emphasis on the concept of oxygenation. The course examines the nursing needs of patients who demonstrate alterations in ventilation, diffusion and tissue perfusion. Includes selected clinical experiences in area health care agencies.  
3 lecture/3 college laboratory/14 clinical hours

NRS 121  Alterations in Health II  3 credits  
*Prerequisite: NRS 110 with a minimum C grade*  
This five-week course presents a continuation of the concepts, knowledge, and skills introduced in NRS 110 with an emphasis on the concept of oxygenation. The course examines the nursing needs of patients who demonstrate alterations in ventilation, diffusion and tissue perfusion. Includes selected clinical experiences in area health care agencies.  
3 lecture/3 college laboratory/14 clinical hours

NRS 122  Concepts of Mental Health Nursing  2 credits  
*Prerequisite: NRS 110 with a minimum C grade*  
This five-week course continues the alterations in health concept framework with an emphasis on mental health nursing, including the concepts of self, family, stress and coping. Includes selected clinical experiences in area mental health care facilities.  
3 lecture/9 clinical hours

NRS 220  Alterations in Health III  3 credits  
*Prerequisites: NRS 110, NRS 120, NRS 121 with a minimum C grade*  
This five-week course presents a continuation of the alterations in health concepts of cellular regulation and metabolism in caring for the patient across the lifespan. The student continues to develop critical thinking and clinical judgment skills when caring for the adult and pediatric patients who experience alterations in cellular regulation and/or metabolism. Learning opportunities occur in selected clinical settings within area health care facilities.  
3 lecture/3 college laboratory/14 clinical hours
NRS 221  Alterations in Health IV  3 credits
Prerequisites: NRS 110, NRS 120, NRS 121
with a minimum C grade
This five-week course presents a continuation of the concepts of mobility and safety, emphasizing care of the aging patient and alterations in neurosensory, central, and peripheral nervous systems across the lifespan. The student continues to develop critical thinking and clinical judgment skills when caring for the adult and pediatric patients who experience alterations in neurosensory, central, and peripheral nervous system disorders. Includes selected clinical experiences in area health care facilities. 3 lecture/3 college laboratory/14 clinical hours

NRS 222  Concepts of Maternal and Family Nursing  2 credits
Prerequisites: NRS 110, NRS 120, NRS 121
with a minimum C grade
The concepts of maternal/family nursing, examining needs of the childbearing and child-caring family, are presented in this five-week course utilizing the nursing process as a framework. Includes selected clinical experiences in area health care facilities. 3 lecture/3 college laboratory/14 clinical hours

NRS 230  Alterations in Health V  3 credits
Prerequisites: NRS 110, NRS 120, NRS 121, NRS 122, NRS 220, NRS 221, NRS 222 with a minimum C grade
This five-week course is a continuation of the alterations in health conceptual framework with an emphasis on the concepts of elimination, oxygenation, and perfusion across the lifespan. Learning opportunities occur in selected clinical settings within area health care facilities. 3 lecture/3 college laboratory/14 clinical hours

NRS 231  Alterations in Health VI  3 credits
Prerequisites: NRS 110, NRS 120, NRS 121, NRS 122, NRS 220, NRS 221, NRS 222 with a minimum C grade
This five-week course is a continuation of the alterations in health conceptual framework with an emphasis on the concepts of safety, intracranial regulation, sensory perception, and tissue integrity. Includes selected clinical experiences in area health care facilities and simulations. 3 lecture/3 college laboratory/14 clinical hours

NRS 240  Transition to Practice  4 credits
Prerequisites: NRS 110, NRS 120, NRS 121, NRS 122, NRS 220, NRS 221, NRS 222, NRS 230, NRS 231
with a minimum C grade
This five-week course prepares the student to enter the workforce, with an emphasis on strategies for professional practice and career development. In a weekly seminar setting, students actively participate in presenting select topics in leadership theory. Through a precepted clinical experience, time management and coordination of care principles and concepts are integrated in planning for the care of patients in selected clinical settings within area health care facilities. 3 lecture/3 college laboratory/14 clinical hours

NSG 133  Concepts of Nursing III  3 credits
Prerequisites: BIO 104, NSG 134, NSG 135, PSY 207
Assists students in the use of the nursing process when caring for the client experiencing mental health problems. Emphasizes client care during all phases of mental health disorders, from prevention through rehabilitation. Provides experiences in a variety of mental health settings. 30 lecture/60 clinical hours

NSG 134  Physical Assessment  1 credit
Prerequisite: NSG 131
Corequisite: NSG 135
Provides the knowledge and skills necessary to perform a comprehensive adult health assessment. Through discussion, laboratory, and individual practice, all body systems are assessed. Emphasizes interviewing, obtaining a complete health history, performing a physical assessment, and systematic documentation of findings. 2 laboratory hours

NSG 135  Concepts of Nursing II  7 credits
Prerequisite: NSG 131 with a minimum C grade
Corequisite: BIO 104 or NSG 134
Prepares students to use the nursing process in caring for clients experiencing common physiological alterations. Builds upon previous learning to develop additional skills. Provides clinical experience in a variety of settings. 60 theory/180 clinical hours

NSG 136  LPN Transition: Nursing Through the Life Span  9 credits
Prerequisites: BIO 103, ENG 101, PSY 101, PSY 207
Covers the content and skills presented in NSG 131, 133, 135 and 234. Emphasizes use of the nursing process to meet the self-care deficits of clients and families through the life span. Topics include critical thinking, cultural diversity, holistic care plans, health promotion, discharge planning, and professional practices. [Enrollment requires current LPN license.]

NSG 232  Advanced Medical Surgical Nursing  9 credits
Prerequisites: BIO 201, ENG 101, NSG 133, PSY 207
Develops knowledge and skills to care for clients – individuals and groups – with multiple needs requiring complex interventions. Stresses mastery of intricate psychomotor techniques and explores complex client problems resulting in alteration of homeostatic mechanisms. Provides clinical learning experiences in a variety of settings including critical care areas.

NSG 233  Pathways to Practice  2 credits
Prerequisite: NSG 232
Explores current issues affecting healthcare delivery, management techniques, and political/legislative strategies. The student manages client care, acts as a member of the health care team, and has an opportunity for further role socialization. Focuses on the application of clinical judgment in specific settings, with the majority of contact hours in the clinical affiliate.

NSG 234  Concepts of Nursing IV  9 credits
Prerequisites: ENG 101, NSG 133, PSY 207
Corequisite: BIO 201
Prepares the student to use the nursing process in caring for clients across the life span. Emphasizes health promotion, illness prevention, and rehabilitation. Offers learning experiences in a variety of settings including pediatric facilities.

NSG—Nursing: Cooperative Program
All NSG courses are based with and taught at St. Francis Medical Center School of Nursing.

NSG 131  Concepts of Nursing I  6 credits
Corequisites: BIO 103, PSY 101
Introduction to concepts and procedures of nursing practice. Fundamental skills are developed and applied within the framework of the nursing process to meet the physiological, social, and psychological needs of clients. Clinical experiences focus on alterations in health of the adult client with acute and chronic medical-surgical conditions. 60 theory/120 clinical hours
NUR—Nursing

The minimum passing grade for all NUR courses is C.

NUR 151 Pharmacology in Nursing 3 credits
Prerequisite: Nursing program first year completion, or permission of instructor
Theoretical approach to pharmacology, expanding basic concepts of drug knowledge required to administer medication safely. Emphasizes pharmacology as an integrated science requiring up-to-date information consistent with current nursing responsibilities, technology, and practice. Drug therapies affecting body systems are a major consideration.

NUR 215 Precepted Clinical Experience 2 credits
Prerequisites: Nursing program first year completion, and externship acceptance
Supervised clinical experience in conjunction with externship at an approved local healthcare facility. Designed to strengthen and broaden the competencies of second-year nursing students and enhance their knowledge of the role of the RN. Participants must be accepted into the facility's externship program. Includes periodic on-campus seminars.

OHT—Ornamental Horticulture

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>OHT 101</td>
<td>Plant Science</td>
<td>3 credits</td>
<td></td>
<td>2 lecture/2 laboratory hours</td>
</tr>
<tr>
<td>OHT 102</td>
<td>Ornamental Horticulture</td>
<td>3 credits</td>
<td></td>
<td>2 lecture/2 laboratory hours</td>
</tr>
<tr>
<td>OHT 103</td>
<td>Soil and Plant Nutrition</td>
<td>4 credits</td>
<td>CHE 100 or equivalent</td>
<td>3 lecture/3 laboratory hours</td>
</tr>
<tr>
<td>OHT 121</td>
<td>Herbaceous Plants</td>
<td>3 credits</td>
<td></td>
<td>2 lecture/2 laboratory hours</td>
</tr>
<tr>
<td>OHT 201</td>
<td>Basic Landscaping and Planning I</td>
<td>3 credits</td>
<td></td>
<td>2 lecture/3 laboratory hours</td>
</tr>
<tr>
<td>OHT 202</td>
<td>Basic Landscaping and Planning II</td>
<td>3 credits</td>
<td>OHT 201 with a minimum C grade</td>
<td>Continuation of OHT 201. Emphasizes practical projects for residential areas and public common spaces. [Spring offering] 2 lecture/3 laboratory hours</td>
</tr>
<tr>
<td>OHT 204</td>
<td>Plant Diseases</td>
<td>3 credits</td>
<td>OHT 101 or permission of program coordinator</td>
<td>Introduction to the history, economic importance, symptoms, causal agents and management of plant diseases. Lab exercises include the isolation, culture, and identification of plant pathogens. [Fall offering] 2 lecture/2 laboratory hours</td>
</tr>
<tr>
<td>OHT 207</td>
<td>Floral Design I</td>
<td>3 credits</td>
<td></td>
<td>Basic principles and elements of design as applied to floral arranging. Emphasizes the primary types of arrangements, flower and greens identification, history of floral design, and an introduction to the floral industry. [Fall offering] 2 lecture/2 laboratory hours</td>
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<tr>
<td>OHT 208</td>
<td>Floral Design II</td>
<td>2 credits</td>
<td>OHT 207 or permission of program coordinator</td>
<td>Emphasis on the commercial rate of production and pricing for corsage, funeral, and bridal work. Includes complete study of floral decorations for formal and informal occasions; advanced color theory and use of textures in designs; creative thinking with designs and containers; and further exploration of the floral industry. [Spring offering] 1 lecture/3 laboratory hours</td>
</tr>
<tr>
<td>OHT 212</td>
<td>Landscape Construction</td>
<td>3 credits</td>
<td>OHT 102 or permission of program coordinator</td>
<td>Introduces students to the implementation and maintenance of landscape projects. Dominant areas of study include bidding and estimating; hardscape installation and maintenance; and advanced landscaping skills and techniques. Advanced skills covered include lighting, drainage, irrigation, planting and pruning. 2 lecture/2 laboratory hours</td>
</tr>
<tr>
<td>OHT 219</td>
<td>Plant Propagation</td>
<td>3 credits</td>
<td>OHT 101 or permission of program coordinator</td>
<td>Principles and techniques involved in the selection, propagation, and growth of garden flowers, greenhouse crops, woody plants, turfgrass, and plants for interior landscape. [Spring offering] 2 lecture/2 laboratory hours</td>
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<tr>
<td>OHT 223</td>
<td>Topics in Horticulture: Gardening</td>
<td>1 credit</td>
<td></td>
<td>Explores topics in gardening, including triumphs and pitfalls of growing annuals, perennials, bulbs, fruits, vegetables and woody plants. Involves fieldwork. [Summer offering] 2 laboratory hours</td>
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<tr>
<td>OHT 224</td>
<td>Topics in Horticulture: Landscaping</td>
<td>1 credit</td>
<td>OHT 201</td>
<td>Application of computer programs to enhance design presentation skills. [Occasional offering] 2 laboratory hours</td>
</tr>
<tr>
<td>OHT 226</td>
<td>Interior Landscape Design</td>
<td>3 credits</td>
<td>OHT 101 or OHT 102 or permission of program coordinator</td>
<td>Emphasizes the key ornamental aspects, cultural requirements, and uses of each species covered. Specific topics include indoor landscaping, propagation, terrariums, and environmental requirements. Involves both taxonomic and common nomenclature. [Spring offering] 2 lecture/2 laboratory hours</td>
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</tbody>
</table>

ACC 205
ABT 104
NUR 151
OHT 226
COURSES

OHT 231  Turfgrass Management I  3 credits
Prerequisite: OHT 101 or OHT 102 or permission of program coordinator
How to establish and maintain turfgrass for residential and commercial applications. Includes identification and use of cultivars, seeding and sodding, insects and pests, fertilization, and irrigation methods. [Spring offering] 2 lecture/2 laboratory hours

OHT 232  Nursery Management I  3 credits
Prerequisite: OHT 101 or OHT 102 or permission of program coordinator
Examines nursery operations and mechanics. Topics include planting and transplanting trees and shrubs, fertilization, pest control, irrigation, pruning, propagation techniques, business operations, and employee management. Lab exercises and a field study of local businesses reinforce material. [Spring offering] 2 lecture/2 laboratory hours

OHT 241  Equipment and Integrated Pest Management  3 credits
Prerequisite: OHT 102 or permission of program coordinator
Review of the equipment and procedures used in horticultural settings with an emphasis on pest management. Topics include theories of and strategies for integrated pest management, pest identification, application of pesticides, calibration of equipment, and equipment operation. [Spring offering] 2 lecture/2 laboratory hours

OHT 291  Ornamental Horticulture
Cooperative Education I  3 credits
Required capstone experience for Ornamental Horticulture degree and certificate candidates. In approved positions related to their specializations, students work for cooperating employers. Includes performance reviews by faculty observers, employer evaluations of proficiencies, periodic seminars, and a final assessment. [Spring, Summer, Fall offering] 270 work experience hours

OHT 292  Ornamental Horticulture
Cooperative Education II  1 credit
Prerequisite: OHT 291
Continuation of OHT 291. [Spring, Summer, Fall offering] 90 work experience hours

OST—Office Systems Technology

OST 102  Introduction to Medical Insurance and Billing  3 credits
Covers health insurance claim processing as well as the medical billing cycle. Includes all aspects of medical insurance including plan options, carrier requirements, state and federal regulations, abstracting relevant information from source documents, and accurate completion of claim forms. 3 lecture hours

OST 105  Medical Insurance Coding and Billing  3 credits
Prerequisites: OST 102, HPE 113 or equivalent proficiency
Extensive coverage of CPT and ICD-9-CM coding procedures. Students learn to abstract information from the patient record and combine it with reimbursement and coding guidelines to optimize physician payment. 2 lecture/2 laboratory hours

OST 106  Medical Office Transcription  3 credits
Prerequisites: OST 111, OST 219 or equivalent keyboarding and word processing skills; HPE 113 or equivalent medical terminology background
Introduction to medical transcription and to Electronic Health Records (using Spring Charts) through medical center work simulations. Exposure to a variety of dictated medical documents including chart notes, history and physical reports, consultations, office procedure notes, x-ray reports, progress notes, and letters. Includes a review of medical terminology as well as specific typing rules for medical documents. 2 lecture/2 laboratory hours

OST 107  Procedures, Law, and Ethics for the Medical Office  3 credits
Prerequisite: OST 111 or equivalent keyboarding skills
Focuses on administrative skills necessary for work in a medical office. Includes communicating with patients, telephone management, organizing and maintaining records, coordinating appointments, and legal and ethical issues. Students use medical management software for scheduling and records management. 3 lecture hours

OST 108  Medical Office Transcription II  2 credits
Prerequisites: OST 111, OST 219 or equivalent keyboarding and word processing skills
Reviews medical transcription and medical terminology. Emphasizes chart note transcription, history and physical reports, and office procedures. Students will transcribe dictated medical notes with growing accuracy and speed. 2 lecture/2 laboratory hours

OST 111  Computer Keyboarding with Keyboarding Applications  3 credits
Prerequisites: OHT 101 or OHT 102 or permission of program coordinator
Examines basic computer keyboarding skills and computer word processing applications. Students develop proficiency in a wide range of word processing applications using Word Processing Applications software. Covers generic keyboarding and word processing skills. 2 lecture/2 laboratory hours

OST 112  Advanced Keyboarding Applications  3 credits
Prerequisite: OST 111 with a minimum C grade
Focuses on advanced word processing skills. Students learn to execute advanced word processing procedures for letters, memos, reports, and tables. Skill goal is 30 to 45 words per minute for three minutes with three or fewer errors. 2 lecture/2 laboratory hours

OST 191  Office Systems Technology: Introduction to Medical Office Management  3 credits
Prerequisites: OST 102, HPE 113 or equivalent keyboarding and word processing proficiency
Focuses on the management of medical offices. Students learn the basic procedures and responsibilities of a medical office assistant. Emphasizes developing skills for handling an office practical environment. 2 lecture/2 laboratory hours

OST 200  Medical Office Transcription II  3 credits
Prerequisites: OST 111, OST 219 or equivalent keyboarding and word processing skills
Reviews and expands the transcription skills covered in Medical Office Transcription II. Students transcribe complex medical notes accurately and quickly. 3 lecture hours

OST 201  Advanced Medical Office Transcription  3 credits
Prerequisites: OST 111, OST 219 or equivalent keyboarding and word processing skills
Advanced medical transcription. Formerly known as Advanced Office Systems Technology: Advanced Transcription and Communication. Students increase typing speed and accuracy and develop greater proficiency in special areas of transcription. 3 lecture hours

OST 202  Advanced Office Systems Technology: Administrative Management  3 credits
Prerequisites: OST 111, OST 219 or equivalent keyboarding and word processing skills
Focuses on advanced administrative management skills in the medical office. Includes medical terminology, coding, reimbursement, medical coding, and medical word processing applications. Emphasis is on combining these skills with advanced administrative management skills. 3 lecture hours

OST 211  Health Records (using Spring Charts) through Medical Office Transcription II  3 credits
Prerequisites: OST 111, OST 219 or equivalent keyboarding and word processing skills
Examines the health records process in the medical office. Emphasis is on Transcription II. Students learn to transcribe dictated medical notes with an increasing level of accuracy and speed. 3 lecture hours

OST 212  Advanced Keyboarding Applications II  3 credits
Prerequisite: OST 112
Focuses on advanced keyboarding applications. Students will learn and execute advanced word processing procedures, including the use of applications software. 3 lecture hours

OST 213  Current Topics in Office Administration  3 credits
Prerequisites: OST 111 and OST 219 or equivalent keyboarding and word processing proficiency
Focuses on current and future trends in office management. Topics include administrative support systems, database management, and professional image building and career advancement. 3 lecture hours

OST 214  Trends in Medical Office Management  3 credits
Prerequisites: OST 111 and OST 219 or equivalent keyboarding and word processing proficiency
Focuses on current and future trends in medical office management. Includes electronic health records and information systems, and the role of electronic technology in the office. 3 lecture hours

OST 215  Office Systems Technology: Advanced Medical Office Transcription and Communication  3 credits
Prerequisites: OST 111, OST 219 or equivalent keyboarding and word processing skills
Advanced medical transcription skills are refined. Students increase typing speed and accuracy and develop greater proficiency in special areas of transcription. 3 lecture hours

OST 216  Health Records (using Spring Charts) through Medical Office Transcription II  3 credits
Prerequisites: OST 111, OST 219 or equivalent keyboarding and word processing skills
Examines the health records process in the medical office. Emphasis is on Transcription II. Students learn to transcribe dictated medical notes with an increasing level of accuracy and speed. 3 lecture hours

OST 217  Advanced Office Systems Technology: Administrative Management  3 credits
Prerequisites: OST 111, OST 219 or equivalent keyboarding and word processing skills
Focuses on advanced administrative management skills in the medical office. Includes medical terminology, coding, reimbursement, medical coding, and medical word processing applications. Emphasis is on combining these skills with advanced administrative management skills. 3 lecture hours

OST 218  Advanced Keyboarding Applications II  3 credits
Prerequisite: OST 212
Focuses on advanced keyboarding applications. Students will learn and execute advanced word processing procedures, including the use of applications software. 3 lecture hours

OST 219  Word Processing Concepts and Applications  3 credits
Prerequisite: OST 111 with a minimum C grade
Focuses on administrative skills necessary for work in a medical office. Includes communicating with patients, telephone management, organizing and maintaining records, coordinating appointments, and legal and ethical issues. Students use medical management software for scheduling and records management. 3 lecture hours

OST 220  Introduction to Medical Insurance and Billing  3 credits
Covers health insurance claim processing as well as the medical billing cycle. Includes all aspects of medical insurance including plan options, carrier requirements, state and federal regulations, abstracting relevant information from source documents, and accurate completion of claim forms. 3 lecture hours

OST 221  Current Topics in Office Administration  3 credits
Prerequisites: OST 111 and OST 219 or equivalent keyboarding and word processing proficiency
Focuses on current and future trends in office management. Topics include administrative support systems, database management, and professional image building and career advancement. 3 lecture hours

OST 222  Advanced Keyboarding Applications II  3 credits
Prerequisite: OST 212
Focuses on advanced keyboarding applications. Students will learn and execute advanced word processing procedures, including the use of applications software. 3 lecture hours

OST 223  Advanced Word Processing Applications  3 credits
Prerequisites: OST 111 and OST 219 or equivalent keyboarding and word processing proficiency
Details advanced word processing functions including macro programming, adding borders, inserting clipart, drawing shapes, executing word art and equation editor, applying columns, styles, fill-in forms and desktop publishing applications. Microsoft Publisher is introduced. 2 lecture/2 laboratory hours
PHI—Philosophy

**GenEd Humanities**

**PHI 102** Introduction to Philosophy 3 credits
A study of the basic problems and methods of philosophical inquiry. Topics include theories about knowledge, reality, human nature, ethics, religion and science, with consideration of the thought of such major thinkers as Plato, Aristotle, Descartes, Hume, Kant, Nietzsche, and Sartre. 3 lecture hours

**GenEd Humanities**

**PHI 113** Logic 3 credits
An introduction to the principles and methods of correct reasoning. A problem-solving approach to the nature and scope of different kinds of logic, identifying and evaluating arguments and fallacies, and crafting well-formed arguments. 3 lecture hours

**GenEd Humanities**

**PHI 204** Ethics 3 credits
An examination of the basic methods and problems of ethics. Consideration of the nature of moral terms, reasoning and action; conceptions of the good life and of right and wrong; free will; and major ethical approaches, including the theories of Aristotle, Kant, Mill, and others. 3 lecture hours

**GenEd Humanities**

**PHI 205** Moral Choices 3 credits
Examines contemporary moral issues such as abortion, euthanasia, capital punishment, affirmative action, pornography, hate speech, gay rights, corporate responsibility, world hunger, global consumption, war, and terrorism. Stresses the critical application of moral theory, principles, and methods. 3 lecture hours

**PHI 209** Business Ethics 3 credits
Ethical concepts applied to business and government. Case studies and analysis of selected moral issues include the ethics of the marketplace, consumerism, the environment, advertising, job discrimination, distributive justice and world poverty. [occasional offering] 3 lecture hours

**GenEd Humanities / Diversity and Global Perspective**

**PHI 210** Eastern Philosophy 3 credits
Prerequisite: ENG 101 or permission of instructor
Introduction to the major philosophical traditions of India, China and other non-Western traditions. Concentrating on the core issues of epistemology, metaphysics and ethics, study involves such major thinkers as Shankara, Ramanuja, Laozi and Confucius. Topics include indigenous and colonial influences as well as critical comparison with Western philosophies. 3 lecture hours

PHO—Photography

**PHO 101** Introduction to Photography 3 credits
Foundation course in photography emphasizes basic techniques for the still film camera and darkroom. The development of creative visual expression is strongly encouraged. Students purchase a manually-controlled film camera and other appropriate materials. 1 lecture/4 studio hours

**PHO 102** Intermediate Photography 3 credits
Prerequisite: PHO 101 with a minimum C grade
Building upon PHO 101, students learn more advanced black-and-white film processing and darkroom techniques. Medium-format cameras provided for student use. 2 lecture/3 laboratory hours

**PHO 103** Introduction to Digital Photography 3 credits
Introductory course for students having basic computer knowledge and interested in gaining knowledge of digital imaging tools and techniques, and improving their creativity. Topics include Photoshop, digital retouching, digital cameras, inkjet printing, resolution, and scanning. 2 lecture/3 laboratory hours

**PHO 202** Studio Photography 3 credits
Prerequisite or Corequisite: PHO 102 or PHO 203 with a minimum C grade
Use digital or film cameras of any format to create portraits, still-life, and product shots. Topics include lighting, composition, technique, and studio equipment. 1 lecture/4 studio hours

**PHO 203** Digital Photography 3 credits
Prerequisite: DMA 110 or PHO 103 with a minimum C grade
Digital still photography including scanning, color matching, editing, retouching and printing using archival workflow practices. Students present their work in group critique. 1 lecture/4 laboratory hours

**PHO 206** Alternative Photographic Processes 3 credits
Explores the methods of historical and non-traditional photographic image making. Techniques explored include Cyanotype, Van Dyke, and Gum Bichromate. Students learn to make duplicate negatives through traditional and digital techniques. 1 lecture/4 studio hours

**PHO 215** Large Format Field Photography 3 credits
Prerequisite: PHO 102 with a minimum C grade or portfolio review
Students explore the mechanics and aesthetic potential of the large-format camera while shooting during class field trips, and enhance darkroom skills while working with large-format negatives. 4x5 field and rail cameras provided. 1 lecture/4 studio hours

**PHO 251** Documentary Photography 3 credits
Prerequisite or Corequisite: PHO 103 or PHO 203 with a minimum C grade
Emphasizes techniques and issues of long- and short-term location assignment shooting. Students are afforded opportunities to gain practical experience covering news, features and sports events for The College Voice and to work with journalism students. A photographic essay is developed throughout the semester. 1 lecture/4 studio hours

**PHO 285** Special Studies in Photography 3 credits
Prerequisites: PHO 102 or PHO 203 with a minimum C grade and coordinator approval
Advanced topics in both traditional and digital photography. Course material is tailored to satisfy special requests by students and to share the specialized talents of the college faculty. [occasional offering] 1 lecture/4 studio hours

**PHO 290** Photography Internship 3 credits
Prerequisite: coordinator approval
Work experience from participating photographic studios, labs, and galleries. 1 lecture/180 laboratory hours
PHYSICS

PHY 101 College Physics I 4 credits
Corequisites: MAT 115
The first of a two-semester non-calculus sequence intended for engineering technology and related majors. Topics include mechanics, heat, sound, and properties of matter. [Students who have not taken high school physics may wish to take PHY 111 as a preparatory course.]
3 lecture/3 laboratory hours

PHY 102 College Physics II 4 credits
Prerequisites: PHY 101 and MAT 115
The second of a two-semester non-calculus sequence. Topics include electricity and magnetism, optics, atomic physics, and nuclear physics. 3 lecture/3 laboratory hours

PHY 109 Fundamentals of Physics 3 credits
Prerequisite: MAT 135
An introduction to the fundamental principles—underlying science and technology—of physics. Intended for the health fields, life sciences, and other areas requiring basic physics literacy. Topics of emphasis include Newtonian mechanics, work and energy, electricity and magnetism, electromagnetic waves, optics, as well as atomic and nuclear physics. 2 lecture/2 laboratory hours

PHY 111 Physical Science Concepts 3 credits
Prerequisite: proficiency in basic algebra
Survey of fundamental concepts in the physical sciences for students not majoring in science or engineering. Covers a broad range of topics in the fields of chemistry, physics, and astronomy such as measurement, motion, forces (gravitational, electromagnetic, nuclear), light, sound, atomic structure, molecular structure, crystal structure, nuclear structure, and various technological applications. Lab exercises support and supplement the lecture topics. 2 lecture/2 laboratory hours

PHY 115 University Physics I 4 credits
Prerequisites: MAT 146 with a minimum C grade; one semester of high school or college physics Corequisite: MAT 151
The first course in a calculus-based physics sequence intended for students majoring in physics, engineering science, computer science, mathematics, and other technical areas. Topics include kinematics, dynamics, statics, energy, momentum, oscillations, gravity, as well as solid and liquid materials. The laws of physics are investigated and applied to problem solving. 3 lecture/3 laboratory hours

PHY 215 University Physics II 4 credits
Prerequisites: PHY 115 and MAT 151 with a minimum C grade
The second course in a calculus-based physics sequence intended for students majoring in physics, engineering science, computer science, mathematics, and other technical areas. Topics include electricity, magnetism, circuits, electromagnetic fields, as well as electromagnetic waves. The laws of physics are investigated and applied to problem solving. 3 lecture/3 laboratory hours

POLITICAL SCIENCE

POL 101 The American Political System 3 credits
Introduction to the basic structures of the United States national government and political processes with a view toward helping the student better understand current issues and policies. Topics include the Constitution, national-state relations and powers, the legislative and judicial processes, elections, and the activities of interest groups. 3 lecture hours

POL 102 State and Local Government 3 credits
Analysis of the structure and processes of state and local governments. Examination of current events and trends in modern politics further enhances awareness of the nature, strengths and weaknesses of government. 3 lecture hours

POL 201 International Relations 3 credits
A broad-based survey of international relations using a variety of theoretical perspectives that allow students to better understand and analyze current and past international behavior. Concepts include balance of power, economic interaction, diplomacy, the role of international organizations, leadership styles, and public policymaking in the international context. 3 lecture hours

POL 203 Law and Society 3 credits
Explains the interaction of American law and society and the influence of legal doctrine and thought on broad trends in society with an emphasis on the role of the Supreme Court in American life. Examines recent major Supreme Court decisions. [Occasional offering] 3 lecture hours

POL 205 Constitutional Law 3 credits
Introduces the principles of U.S. constitutional law including the constitutional basis for the federal system: powers of national government; the rights against national and state government; and the process of judicial review and the role of constitutional interpretation. 3 lecture hours
PSY—Psychology

PSY 101  Introduction to Psychology  3 credits
Prerequisite: PSY 101 with a minimum C grade
The scientific study of human nature – facts, principles, and theories concerning the mental, emotional, neurological, and social dimensions of human experience. Topics include consciousness, learning, thinking, memory, brain structure and function, motivation and emotion, development, personality, mental illness and its treatment, relationships, and social influence.  3 lecture hours

PSY 201  Educational Psychology  3 credits
Prerequisite: PSY 101 with a minimum C grade
An in-depth study of fundamental concepts and principles with broad applicability to classroom practice, supporting the preparation and continuing development of educational and human service professionals. Topics include student development, student diversity, learning, cognitive processes, motivation, and instructional and assessment strategies.  3 lecture hours

PSY 204  Social Psychology  3 credits
Prerequisite: PSY 101 with a minimum C grade
Studied the behavior and development of the individual in society, the function of social attitudes, and the emergence of social awareness. Topics include socialization and identity, person perception, attraction, attribution, theory, conformity and obedience, and attitudes and prejudices.  3 lecture hours

PSY 207  Developmental Psychology: Across the Life Span  3 credits
Prerequisite: PSY 101 with a minimum C grade
Studies the physical, mental, emotional, and social development of the individual throughout the life span. Students learn to evaluate major theories and methods of study in developmental psychology, to identify the opportunities and dangers inherent at each phase of life, and to understand the factors that influence developmental processes.  3 lecture hours

PSY 208  Theories of Personality  3 credits
Prerequisite: PSY 101 with a minimum C grade
 Defines and assesses human personality within the context of current scientific advances as well as seminal historical perspectives. Examines the impact of individual psychological differences in predicting various life outcomes.  3 lecture hours

PSY 210  Abnormal Psychology  3 credits
Prerequisite: PSY 101 with a minimum C grade
Discusses the question: What is abnormal behavior and when does this behavior become a diagnosable disorder? History of psychological disorders and early treatments are examined along with the current classifications of psychological disorders as defined by the American Psychological Association. Theories of causation, prevalence, and treatments are also explored.  3 lecture hours

PSY 215  Human Sexuality  3 credits
Prerequisite: PSY 101 with a minimum C grade
Describes the anatomy and physiology of the human reproductive system and the physiology of human sexual functioning. Emphasizes human sexuality as reflecting the psychological makeup of the individual. Stresses the importance of cultural influences on an individual's behavior, along with interpersonal relationship factors.  3 lecture hours

PSY 221  The Psychology of Women  3 credits
Prerequisite: PSY 101 with a minimum C grade
Investigates personality development, physiology, sexuality, and identity formation through an analysis of sex roles and sex typing for women and men. Examines how traditional, theoretical, and therapeutic frameworks view and treat women, and explores alternative theoretical and therapeutic modes.  3 lecture hours

PSY 230  Special Studies in Psychology  3 credits
Prerequisites: ENG 102 and PSY 101 with a minimum C grade or permission of instructor
Consists of special courses in psychology which cater to needs expressed by the student and the broader general community. Taking advantage of particular faculty expertise, the course is offered on occasion in response to specific demand.  3 lecture hours

PTA—Physical Therapist Assistant

Except as noted, enrollment in PTA courses is limited to students who have completed all basic skill requirements and who have received full acceptance into the program. PTA majors are required to earn a minimum grade of C+ in PTA courses.

PTA 101  Introduction to PTA  1 credit
Prerequisite: ENG 101
Open to all students interested in physical therapy as a career and required for Physical Therapist Assistant majors. Provides an overview of the health care system and the specific roles of physical medicine and rehabilitation professionals. Topics include medical terminology, documentation, and communication skills.  1 lecture hour

PTA 105  Kinesiology  3 credits
Prerequisite: BIO 103 with a minimum C+ grade
Open to all students interested in physical therapy as a career or in the study of human movement; required for Physical Therapist Assistant majors. Introduces the concepts of locomotion, forces, levers, and biomechanics. Topics include origins, insertions, innervations, and actions of the prime movers of the musculoskeletal system.  3 lecture hours

PTA 106  Therapeutic Measurement  2 credits
Prerequisites: BIO 104 with a minimum C+ grade
Laboratory practice of measurement skills for joint range of motion (ROM), muscle length, and muscle strength. Includes volumetric, circumferential and postural assessments; manual muscle tests; and range of motion measurements using a goniometer. Competencies evaluated throughout the course.  1 lecture/2 laboratory hours

PTA 112  Pathology for PTAs  3 credits
Prerequisites: BIO 104 with a minimum C+ grade
Completed within the past five years; PTA 101, PTA 105
Required for Physical Therapist Assistant majors. Covers the essential nature of diseases and abnormalities of structure and function characteristic of diseases.  3 lecture hours
PTA 205 Motor Development 1 credit
Prerequisites: PTA 101, PTA 105, PTA 112
Corequisite: PTA 213
Introduces developmental milestones for normal human motor development. Topics include hereditary, congenital, and acquired disorders with special emphasis on abnormalities of structure and function that impact human motor development. 1 lecture hour

PTA 210 PTA Techniques and Modalities 4 credits
Prerequisites: PTA 106, PTA 112
Addresses patient care and handling, including patient positioning and bed mobility, vital signs, transfers, gait and posture, massage, aseptic techniques, wound care and bandaging, edema management, and continuous passive motion devices. Students develop their skills through practice with each other. Competencies evaluated throughout the course. 3 lecture/2 laboratory hours

PTA 211 Physical Agents 4 credits
Prerequisites: PTA 106 and PTA 112;
MAT 115 or MAT 140 or PTA program approved
MAT equivalent with a minimum C grade
Study of physical agents and therapeutic modalities in physical therapy practice. Lab and lecture activities develop problem-solving and critical thinking skills for the use of electrical stimulation, heat, cold, traction, and hydrotherapy for therapeutic interventions. Competencies evaluated throughout the course. 3 lecture/3 laboratory hours

PTA 213 PTA Therapy Clinic 3 credits
Prerequisites: PTA 210, PTA 211
Corequisite: PTA 205
Therapeutic interventions for conditions arising from cerebral vascular accidents, traumatic brain injury, spinal cord injury, amputations, joint replacement, cardiac disease, and neurologic dysfunction. Emphasizes activities to promote optimal functional outcomes. Lab develops decision-making skills involving assistive devices, orthotics and prosthetics. Competencies evaluated throughout the course. 3 lecture/3 laboratory hours

PTA 216 Orthopedics in PTA 2 credits
Prerequisites: PTA 106, PTA 112, PTA 210
A study of orthopedic conditions and their underlying pathology. Emphasis on physical therapy interventions utilized in the rehabilitation of specified conditions. Required course for all PTA majors. 2 lecture/laboratory hours

PTA 224 PTA Clinical Education I 3 credits
Prerequisites: PTA 106, PTA 112
Corequisite: PTA 226
Supervised clinical instruction to observe the clinic environment and PT/PTA interactions; develop professional deportment and communication; refine measurement and time management skills; and learn about patient chart information. Experiences are shared with classmates and faculty in PTA Seminar I (PTA 226). 40 hours per week for 4 weeks = 160 clinical hours

PTA 226 PTA Seminar I 2 credits
Prerequisites: PTA 106, PTA 112
Corequisite: PTA 224
Review and discussion of clinical experiences using a case study approach. Topics include documentation, professional growth and development, quality assurance concepts, and negotiation skills for employment opportunities. 3 lecture hours

PTA 235 PTA Clinical Education II 4 credits
Prerequisites: PTA 210, PTA 211, PTA 224, PTA 226
Corequisite: PTA 236
Supervised full-time clinical experience allows students to apply and practice skills learned in other classes and learn to become an integral part of a physical therapy department. 40 hours per week for 5 weeks = 200 clinical hours

PTA 236 PTA Seminar II 2 credits
Prerequisite: PTA 226
Corequisite: PTA 235
Continues the case study approach with emphasis on developing a patient care plan. Students explore learning and communication styles and have the opportunity to observe fabrication of orthotics and prosthetics, research home medical equipment, and witness physical therapy in an inpatient rehabilitation setting. 3 lecture hours

PTA 240 PTA Clinical Education III 5 credits
Prerequisites: PTA 213, PTA 235
Corequisite: PTA 241
Supervised full-time clinical experience allows students to practice all of the techniques and procedures taught in the program, performing all that is normally expected of a physical therapist assistant. Students are expected to conduct an “in-service” presentation to colleagues at the clinical site. 40 hours per week for 6 weeks = 240 clinical hours

PTA 241 PTA Seminar III 1 credit
Prerequisite: PTA 236
Corequisite: PTA 240
Discussion-oriented review of ethical and moral dilemmas in health care and special practice areas within physical therapy, preparation for licensure, and employment as PTAs. Students have the opportunity to meet with a panel of practicing PTAs to discuss employment opportunities. 1 lecture hour

RAD—Radiography

Enrollment in radiography courses is limited to students who have completed all basic skill requirements and who have received full acceptance into the program. The minimum passing grade for all RAD courses is C.

RAD 107 Introduction to Radiography 1 credit
Prerequisites: MAT 037 (or MAT 037A and 037B), ENG 024, ENG 034
Corequisites: RAD 119, RAD 127, BIO 103, MAT elective
Introduction to radiography including accreditation requirements, professional organizations, professional ethics, legal responsibilities, patient care, elementary radiation protection, and darkroom technique. [Fall offering] 1 lecture hour

RAD 114 Radiation Protection 2 credits
Prerequisites: RAD 107, RAD 119, RAD 127
Corequisites: BIO 104, RAD 120, RAD 128
Explores principles of radiation biology and radiation protection, including the production of X-rays, the interaction of radiation and matter, radiation units, and methods to protect the radiographer and patient. [Spring offering] 2 lecture hours
COURSES

RAD 119 Principles of Imaging Science I 2 credits
Prerequisites: MAT 037 (or MAT 037A and 037B), ENG 024, ENG 034
Corequisites: RAD 107, RAD 127, BIO 103, MAT elective
Examines fundamental principles of radiation physics including the atom, electromagnetic radiation, X-ray tube components, and X-ray production. Presents imaging science principles including the primary factors of technique formation and the art of film critique, with clinical application of these principles. [Fall offering] 2 lecture hours

RAD 120 Principles of Imaging Science II 3 credits
Prerequisites: RAD 107, RAD 119, RAD 127
Corequisites: BIO 104, RAD 114, RAD 128
Examines image production factors that control and contribute to the radiographic image, including density, contrast and recorded detail. Presents the radiation physics principles of electricity, magnetism and X-ray circuitry. The laboratory component demonstrates the clinical application of image production and evaluation. [Spring offering] 2 lecture/2 laboratory hours

RAD 127 Radiographic Procedures I 6 credits
Prerequisites: RAD 107, RAD 119, RAD 127
Corequisites: ENG 024, ENG 034
Study of standard radiographic positioning and related medical terminology of the chest, abdomen, and upper and lower extremities. Involves laboratory simulation and evaluation. Students acquire clinical experiences at an affiliate hospital sufficient to demonstrate competency in a specified number and variety of radiographic procedures. [Fall offering] 3 lecture/3 laboratory/24 clinical days

RAD 128 Radiographic Procedures II 6 credits
Prerequisites: RAD 107, RAD 119, RAD 127
Corequisites: BIO 104 or RAD 114, RAD 120
Continuation of RAD 127, with standard radiographic positioning and related medical terminology of the bony thorax, pelvic girdle, upper femora, and vertebral column. Involves laboratory simulation and evaluation. Students acquire clinical experiences at an affiliate hospital sufficient to demonstrate competency in a specified number and variety of radiographic procedures beyond those demonstrated the previous semester. [Spring offering] 2 lecture/3 laboratory/28 clinical days

RAD 206 Clinical Practicum 3 credits
Prerequisites: RAD 114, RAD 120, RAD 128
Students participate in clinical education at an affiliate hospital, performing procedures in accordance with the clinical competency evaluation process. Radiographic procedures are performed on a variety of patient types. [Summer offering] 42 clinical days

RAD 216 Advanced Imaging Modalities and Special Procedures 3 credits
Prerequisite: RAD 206
Corequisite: RAD 228
Presents the principles of fluoroscopy and tomography, with an overview of special radiographic procedures and advanced imaging techniques including computerized tomography and magnetic resonance imaging. [Fall offering] 3 lecture hours

RAD 220 Quality Assurance and Radiography Seminar 4 credits
Prerequisites: RAD 216, RAD 228
Corequisites: RAD 224, RAD 240
Evaluation of radiographic systems to ensure consistent quality of diagnostic images. Includes discussion of state, federal and nongovernmental requirements. Introduces computer applications used in medical facilities and helps students prepare for the A.R.R.T. examination. [Spring offering] 3 lecture/2 laboratory hours

RAD 224 Introduction to Pathology 2 credits
Prerequisites: RAD 216, RAD 228
Corequisites: RAD 220, RAD 240
Survey of the disease process and pathological conditions. Includes an in-depth study of diseases commonly demonstrated radiographically. [Spring offering] 2 lecture hours

RAD 228 Radiographic Procedures III 7 credits
Prerequisite: RAD 206
Corequisite: RAD 216
Continuation of RAD 128. Study of standard radiographic positioning and related medical terminology of the urinary system, alimentary canal, biliary system and cranium. Involves laboratory simulation and evaluation. Students acquire correlated clinical experience and continue the clinical competency evaluation process at an affiliate hospital. [Fall offering] 2 lecture/3 laboratory/42 clinical days

RAD 240 Advanced Clinical Experience I 3 credits
Prerequisites: RAD 216, RAD 228
Corequisites: RAD 220, RAD 224
Offers advanced clinical experience in all aspects of radiologic technology in cooperation with area hospitals. Students acquire clinical experiences and proficiencies sufficient to demonstrate competency in a specified number and variety of diagnostic radiographic procedures. [Spring offering] 42 clinical days

RAD 242 Advanced Clinical Experience II 2 credits
Prerequisite: RAD 240
Continuation of RAD 240. In cooperation with area hospitals, students enhance proficiency in all aspects of radiologic technology by performing diagnostic radiographic examinations on a variety of patients. In this final phase of the clinical competency process, remaining competency evaluations test student ability with respect to skills expected of entry-level radiographers. [Summer offering] 28 clinical days

REL—Religious Studies

REL 101 Introduction to Religious Studies 3 credits
An introduction to the study of religions, focusing on the nature of religious beliefs and practices, such as sacred power, myths, texts, art and rituals, the problem of evil, and the relationship between cultures, ethics and religions. 3 lecture hours

REL 102 Living World Religions 3 credits
A comparative study of the world’s major religions, through a critical exploration of the essential teachings and cultural context of Hinduism, Buddhism, Judaism, Christianity, Islam, Daoism, Confucianism among others, including pre- and post-colonial African and American traditions. 3 lecture hours

SOC—Sociology

SOC 101 Introduction to Sociology 3 credits
Corequisite: ENG 101 or college-level eligibility
An introduction to the sociological analysis of society and culture, including the origin and design of political, economic, and social institutions such as religion, the family, class and caste, education, values, norms, roles, and sociocultural change. Students learn to analyze, evaluate, and critique social structures. 3 lecture hours

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SOC 104 Sociology of Education 3 credits
Corequisite: ENG 101 or college-level eligibility
Overview of the relationship between the school and society. Topics include the school as an agent of social change, the role of teachers, multiculturalism, human development stages, domains of learning, and the socio-historical role of education. 3 lecture hours

SOC 107 Social Problems 3 credits
Corequisite: ENG 101 or college-level eligibility
An introduction to sociological theory and methods, with background on the nature, causes of, and possible solutions to major social problems facing large, complex societies. Possible topics discussed include poverty and inequality, drug addiction, crime, health care, racial and minority group issues, and environmental concerns. 3 lecture hours

SOC 132 Introduction to Women's and Gender Studies 3 credits
Corequisite: ENG 101 or college-level eligibility
[also offered as WGS 132] An introduction to major theories and ideas developed within feminism and the field of gender studies. Specific topics include theoretical explanations of gender; representations of gender; economic, social, and political implications of gender constructs; and cross-cultural perspectives on gender. Texts, films, and other resources contribute toward an understanding of these issues. 3 lecture hours

SPA—Spanish

SPA 101 Beginning Spanish I 3 credits
Prerequisite: placement by exam, or permission of instructor [not appropriate for students who have completed one or more years of high school Spanish] The first in a sequence of courses designed for students with little or no prior knowledge of Spanish. Spoken communication in Spanish is both the end goal and the means of instruction. Emphasizes the four communicative skills in a culturally authentic context. Reading and writing are assigned out of class to facilitate effective listening and speaking practice in class. Basic grammar skills are also introduced. 3 lecture hours

SPA 102 Beginning Spanish II 3 credits
Prerequisite: SPA 101 with a minimum C grade, placement by exam, or permission of instructor [not appropriate for students who have completed two or more years of high school Spanish] The second in a sequence of courses designed for students with little or no prior knowledge of Spanish. Spoken communication in Spanish is both the end goal and the means of instruction. Emphasizes the four communicative skills in a culturally authentic context. Reading and writing are assigned out of class to facilitate effective listening and speaking practice in class. Basic grammar skills are also introduced. 3 lecture hours

SPA 201 Intermediate Spanish I 3 credits
Prerequisite: successful completion of two years of high school Spanish, SPA 102 with a minimum C grade, placement by exam, or permission of instructor
Previously learned grammar is reviewed and applied – typically in the present tense – to discussions and debates of topics in Hispanic culture, politics, and history. Spanish reading, writing, listening and speaking are the means and end goal of instruction. Very little new grammar is introduced. 3 lecture hours

SPA 202 Intermediate Spanish II 3 credits
Prerequisite: SPA 201 or permission of instructor
Continuation of SPA 201. Previously learned grammar is reviewed and applied – typically in the present tense – to discussions and debates of topics in Hispanic culture, politics, and history. Spanish reading, writing, listening and speaking are the means and end goal of instruction. Very little new grammar is introduced. 3 lecture hours
### COURSES

**COURSES**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CODE</th>
<th>NAME</th>
<th>LEVEL</th>
<th>CREDITS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ABT 104</strong></td>
<td>Humanities</td>
<td>Introduction to Theatre</td>
<td>3 lecture hours</td>
<td>Beginning study of the theatre as an art form, examines how a dramatic text is transformed into a stage production. Students read and analyze plays to understand theatrical production practices – historical as well as current – and dramatic theory. Requires attending current theatre productions. [Fall and Spring offering]</td>
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<tr>
<td><strong>ACC 205</strong></td>
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<tr>
<td><strong>STA 101</strong></td>
<td></td>
<td>Study Abroad Seminar</td>
<td>1 credit</td>
<td></td>
<td>Prerequisite: prior approval to travel abroad Corequisite: Study Abroad course(s) A complement to a student’s study abroad experience. Students are challenged to reflect on their exposure to culturally diverse people, examine multicultural experiences, and draw connections between study abroad and future endeavors, with the goal of articulating this significance to potential employers and other audiences. Students construct an e-portfolio to catalog their work.</td>
</tr>
<tr>
<td><strong>SWK 110</strong></td>
<td></td>
<td>Introduction to Human Services</td>
<td>3 credits</td>
<td></td>
<td>Corequisite: ENG 101 or college-level eligibility Overview of human service and social work practice and problem areas, requiring a supervised 45-hour (minimum) volunteer experience within a social service agency and including study of and experience with social development in diverse environments using human service models to understand individual, population, community, and ecosystems organization.</td>
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<tr>
<td><strong>THR 104</strong></td>
<td>Humanities</td>
<td>Fundamentals of Acting</td>
<td>3 credits</td>
<td>Introductory course for both actors and non-actors, examines the history and theory of acting with emphasis on Stanislavski and 20th century methods. Students participate in breathing, relaxation, and centering exercises, theatre games, and improvisational work to develop basic acting skills. Study includes the fundamentals of text analysis, group rehearsal dynamics, and verbal evaluation of other acting work. The class concludes with a public performance. [Fall and Spring offering]</td>
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<tr>
<td><strong>THR 210</strong></td>
<td></td>
<td>Theatre History: Classical to Elizabethan</td>
<td>3 lecture hours</td>
<td>A study of the evolution of theatre from classical Greek and Roman traditions through the Elizabethan period. Emphasis on the play in performance reflecting the changing physical theatre, as well as the social, political, and artistic currents of each period. [Spring offering]</td>
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<tr>
<td><strong>SPA 251</strong></td>
<td></td>
<td><strong>Advanced Spanish I</strong></td>
<td>3 credits</td>
<td></td>
<td>Prerequisite: SPA 202 or permission of instructor A conversation course which covers a variety of topics related to Hispanic culture through the reading and interpretation of texts including examples of authentic Hispanic literature. Taught entirely in Spanish, this course additionally develops speaking and writing skills, builds vocabulary, and stimulates debate, conversation, and class discussion.</td>
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<tr>
<td><strong>SPA 252</strong></td>
<td></td>
<td><strong>Advanced Spanish II</strong></td>
<td>3 credits</td>
<td></td>
<td>Prerequisite: SPA 202 or permission of instructor A grammar course taught conversationally in Spanish and within the context of topics related to Hispanic culture and society, including some reading from authentic Hispanic literature. Involves vocabulary building, but mainly emphasizes review and oral practice of grammatical constructions to improve the non-native student’s oral and written communication skills.</td>
</tr>
<tr>
<td><strong>STA 180</strong></td>
<td></td>
<td>Study Abroad Seminar</td>
<td>1 credit</td>
<td></td>
<td>Prerequisite: prior approval to travel abroad Corequisite: Study Abroad course(s) A complement to a student’s study abroad experience. Students are challenged to reflect on their exposure to culturally diverse people, examine multicultural experiences, and draw connections between study abroad and future endeavors, with the goal of articulating this significance to potential employers and other audiences. Students construct an e-portfolio to catalog their work.</td>
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<td><strong>THR 107</strong></td>
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<td>Dramatic Writing for Stage and Screen</td>
<td>3 credits</td>
<td></td>
<td>Prerequisite: ENG 101 or divisional permission Works of master playwrights and screenwriters are read and discussed. In-class writing exercises, “sense memory” prompts, and strategies for developing dynamic character-based storytelling for the stage are covered during first half of course. Students then adapt and expand this work to create a 20-minute screenplay.</td>
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<tr>
<td><strong>THR 150</strong></td>
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<td>Scene Techniques for the Entertainment Industry</td>
<td>3 credits</td>
<td></td>
<td>Prerequisites: ETT 102, THR 207 with a minimum C grade Through a variety of projects, students are introduced to fundamental techniques and materials used in scenic art. Explores color theory, various media, proper preparation of surfaces, different painting techniques, Pissaro shapes, cartooning backdrops, trompe l’oile, and teamwork. Examines ways these techniques and materials are used in the theatre and other entertainment industries including film, television, theme parks, and casinos. [occasional offering]</td>
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<tr>
<td><strong>THR 152</strong></td>
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<td>Lighting Technology</td>
<td>3 credits</td>
<td></td>
<td>Prerequisite: ETT 102 Introduction to stage lighting and to the aesthetics of scenic lighting as a visual art. Involves hanging, alignment, focusing, maintenance, and operation of various types of stage lighting fixtures. Students are required to work as a lighting technician at approved venues.</td>
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<tr>
<td><strong>THR 207</strong></td>
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<td>Scene Study I</td>
<td>3 credits</td>
<td></td>
<td>Combines literary and theatrical skills. Students analyze scenes from plays, screenplays, and non-dramatic literature to discover how theatre artists use character, setting, circumstance, and dialogue when transforming text into performance. The interaction of writers, actors, and directors in developing and presenting scenes in performance is also observed. The class concludes with a public performance. [Fall offering]</td>
</tr>
<tr>
<td><strong>ETT 102</strong></td>
<td></td>
<td>Entertainment Industry</td>
<td>3 credits</td>
<td></td>
<td>Prerequisites: ETT 102, ETT 104 with a minimum C grade A survey course covering all aspects of the entertainment industry. Includes history, organization, and career opportunities in the entertainment industry. Students discuss the role of the entertainment lawyer, the recording industry, the music publishing industry, agents, managers, and business managers.</td>
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</tbody>
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COURSES

THR 212 Central Voices in World Drama 3 credits
Prerequisite: ENG 102 or divisional permission
Introduces students to important dramatic texts and examines them beyond the page as blueprints for performance. Emphasizes playwriting conventions, elements, styles, trends, and movements to chart changing dramaturgy and production practices in the world. Some playwrights include Christopher Marlowe, Henry David Hwang, Tennessee Williams, Bertolt Brecht, Amiri Baraka, Arthur Miller, Caryl Churchill, and Wole Soyinka. [Fall offering] 3 lecture hours

THR 217 Theatre Workshop 3 credits
Prerequisites: THR 104 and THR 105 and/or permission of instructor
A practical study of theatrical production by intensive script study and supervised technical projects which culminates in performances for a live audience. Students apply techniques they have learned in prior acting and technical classes to the research, rehearsal and performance of a role in a fully realized theatrical production. [Spring offering] 1 lecture/5 laboratory hours

UTI 111 Alternative Energy Sources 3 credits
[also offered as ERG 111] An introduction to electrical energy generation and its impact on the environment and society. Various energy alternatives such as solar, wind, geothermal, ocean and fuel cells are examined, along with the positive and negative aspects of each. 3 lecture hours

UTI 112 Energy Audit and Weatherization 3 credits
Prerequisite: placement in college-level math and English [also offered as ERG 112] Introduction to the analysis of energy use in buildings, the basic principles of insulation and weatherization, and the tools needed to conduct an energy audit. Topics include heat transfer through the building envelope as well as applicable codes and regulations for residential and light commercial building construction. 2 lecture/2 laboratory hours

UTI 113 Solar Installation Technology 3 credits
Prerequisite: placement in college-level math and English [also offered as ERG 113] Introduction to the solar PV industry. Covers system types and efficiencies, solar site evaluation, differences between grid intertie and off-grid systems and associated components. Students use materials and tools common in solar panel installation. Safety on the job is emphasized. 2 lecture/2 laboratory hours

UTI 123 Job Success: The Search, Resume, and Interview 2 credits
Covers the job search cycle and the activities that take place in each phase of the process. Students learn, develop, and practice practical success strategies for conducting a job search, creating the resume, and interviewing effectively as part of a career management plan. 2 lecture hours

WGS 221 Seminar in Women's and Gender Studies 3 credits
Prerequisites: ENG 101 with a minimum C grade; 9 credits of electives as listed in the Women's and Gender Studies guidelines
An in-depth interdisciplinary exploration of the contributions of the social sciences, the behavioral sciences, literature, and the arts to the study of gender in society. Specific topics include feminist theories, feminist methodologies, and women and gender issues in relation to culture, politics, and the economy. Texts, films, and other resources contribute toward an understanding of these issues. 3 lecture hours

WGS—Women’s and Gender Studies

VPA—Visual and Performing Arts

VPA 228 Artistic Collaboration Workshop 3 credits
Prerequisite: ENG 101
Open to actors, dancers, musicians, media professionals, and fine artists. Alternates between generating new performance work and examining the history of collaboration among established artists of different disciplines in Modernist and Postmodernist movements. Students work with the materials of their specific craft while taking inspiration from the other artistic movements. Participants must attend all sessions, and all assignments require rehearsals outside of class time. [Fall offering] 2 lecture/2 laboratory hours

VPA 252 Lighting Design 3 lecture hours
Prerequisites: ETT 102, THR 152 with a minimum C grade
Fundamentals of lighting design. Analysis of a script for lighting and development of a workable design concept. Through this concept and an evaluation of the performers' spatial relationships in the production, students generate light plots and the associated paperwork common to a production. Students are required to work as a lighting designer at approved venues.

WGS 132 Introduction to Women's and Gender Studies 3 credits
Corequisite: ENG 101 or college-level eligibility
[also offered as SOC 132] An introduction to major theories and ideas developed within feminism and the field of gender studies. Specific topics include theoretical explanations of gender; representations of gender; economic, social, and political implications of gender constructs; and cross-cultural perspectives on gender. Texts, films, and other resources contribute toward an understanding of these issues.

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