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 136 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.

(See page 136 for details.)
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.

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Look for this indicator of approved General Education courses throughout the course descriptions on pages 138-193.

* does not satisfy Laboratory Science general education requirement
• course is also a Diversity and Global Perspective general education elective

OHT 101 Plant Science
OHT 108 Soil and Plant Nutrition
PHY 101 College Physics I
PHY 102 College Physics II
PHY 109 Fundamentals of Physics
PHY 111 Physical Science Concepts
PHY 115 University Physics I
PHY 215 University Physics II
PHY 225 University Physics III

Technology
COS 101 Introduction to Computer Science
COS 102 Computer Science I - Algorithms and Programming
DMA 144 Internet Tools and Techniques
IST 101 Computer Concepts with Applications
IST 102 Computer Concepts with Programming
IST 109 Introduction to Programming

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 107 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
MUS 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 112 Critical Thinking
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

World 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. 3 lecture hours

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

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. 3 lecture hours

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." 4 lecture hours

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. 4 lecture hours

ACC 201 Intermediate Accounting I 3 credits
Prerequisite: ACC 111 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. 3 lecture/1 laboratory hours

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. 3 lecture/1 laboratory hours

ACC 203 Federal Income Taxation 3 credits
Prerequisite: ACC 111 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] 3 lecture hours

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] 3 lecture/1 laboratory hours

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. 3 lecture hours

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. 2 lecture/2 laboratory hours

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. 3 lecture hours

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. 3 lecture/1 laboratory hours

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, comprehensives, and finished art. [Spring and Summer offering] 1 lecture/4 studio hours

ADV 110 Typography I: Basics of Graphic Design 3 credits
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. 1 lecture/4 studio hours

ADV 201 Advertising Design II 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] 1 lecture/4 studio hours

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] 1 lecture/4 studio hours

ADV 210 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 make-up software that integrates text and graphics for a variety of projects. 1 lecture/4 studio hours
ABT 104

ACC 205

Basic grammar skills are also introduced to facilitate effective listening and speaking practice in class. 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.

ARC 102

Graphic Communication for Architecture

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.

ARC 104

Computers in Architecture

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.

ARC 121

Architecture Basic Design I

Corequisite: ARC 102 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 problems explored through presentation drawings and study models. Simple presentation graphics and model-building are introduced. [Fall offering]

ARC 122

History of Architecture

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.

ARC 123

Architecture Basic Design II

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. Emphasis continues on the development of process drawing and model-building skills to explore design ideas. [Spring offering]
ARC 124  History and Theory of Modern Architecture  3 credits
Explores the social conditions and major personalities that influenced architectural developments from the Industrial Revolution to the present.  3 lecture hours

ARC 125  Architecture and the Environment  3 credits
Introductory course exploring the various relationships between the man-made world and the natural world. Human perceptions of the physical environment are studied relative to their effects on architectural design and human behavior. Analysis of the urban environment reveals the impact of architecture on quality of life.  3 lecture hours

ARC 134  Building Construction Systems  3 credits
Corequisites: ARC 227, sophomore standing in Architecture or divisional permission
Introductory survey of general concepts of sustainable design as they relate to building construction. Includes site, structural, environmental, envelope systems, materials and building systems. Focus is primarily on low-rise wood and steel structures.  3 lecture hours

ARC 140  Field Studies in Architecture and Urban Planning: America  3 credits
Prerequisite: ENG 101 and approval of instructor
Investigation of architectural characteristics and urban planning patterns in select 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. [occasional offering]

ARC 141  Architecture and Culture: International  3 credits
Prerequisite: ENG 101 and approval of instructor
Exploration of the history, culture, technology, and quality of life as revealed and understood through the architecture and town planning in selected regions overseas. Travel to the selected region is a major component of the course, providing the student with the opportunity to experience the subjects introduced in the lectures prior to the trip. [occasional offering]  24 lecture/21 lab (overseas) hours

ARC 227  Architecture Design I  5 credits
Prerequisite: ARC 123 with a minimum C grade
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

ARC 228  Architecture Design II  5 credits
Prerequisite: ARC 227 with a minimum C grade
Corequisite: ARC 124
Builds on the foundation of ARC 227. More advanced design challenges help the student to sharpen design skills and to continue expanding an architectural vocabulary. [Spring offering]  1 lecture/8 studio hours

ARC 285  Special Studies in Architecture Design  3 credits
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. [occasional offering]  3 lecture hours

ART — Fine Arts, Art History

ART 101  Art and Culture  3 credits
Prerequisite: ART 121, sophomore standing
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

ART 102  Basic Drawing  3 credits
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

ART 103  Freehand Drawing for Architects  3 credits
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

ART 104  Life Drawing  3 credits
Prerequisite: ART 102
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

ART 105  Two-Dimensional Design  3 credits
Prerequisite: ART 121
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

ART 106  Three-Dimensional Design  3 credits
Prerequisite: ART 121
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

ART 121  History of Art I  3 credits
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

ART 122  History of Art II  3 credits
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

ART 123  History of Modern Art  3 credits
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

ART 124  History of Non-Western Art  3 credits
Focus on the aesthetic and historical evaluation of artists, styles, and cultures from India, China, Japan, Indonesia, Thailand, Cambodia, and pre-Columbian America. Color slides are analyzed and discussed.  3 lecture hours
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<td><strong>ART 125</strong> Topics in Contemporary Art 3 credits</td>
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<tr>
<td><strong>Prerequisite:</strong> ENG 101 or divisional permission</td>
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<tr>
<td>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.</td>
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<td><strong>ART 126</strong> African American Art 3 credits</td>
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<tr>
<td><strong>Prerequisites:</strong> ART 102 or ART 105 or divisional permission</td>
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<tr>
<td>Comprehensive survey of the aesthetic and historical evaluation of African American art, artists and culture from colonial times to the present. Includes slide analysis, discussion, and museum visits.</td>
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<td><strong>ART 130</strong> Painting I 3 credits</td>
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<tr>
<td><strong>Prerequisite:</strong> ART 102 or ART 105 or divisional permission</td>
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<td>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.</td>
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<td><strong>ART 141</strong> Sculpture I 3 credits</td>
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<td>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.</td>
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<td><strong>ART 145</strong> Beginning Ceramics: Handbuilding 3 credits</td>
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<td>Introduction to basic clay experience, devoted to the hand-building 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.</td>
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<tr>
<td><strong>ART 146</strong> Beginning Ceramics: Wheel-Throwing 3 credits</td>
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<tr>
<td>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.</td>
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<tr>
<td><strong>ART 150</strong> Printmaking I 3 credits</td>
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<td>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.</td>
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<tr>
<td><strong>ART 230</strong> Painting II 3 credits</td>
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<tr>
<td><strong>Prerequisite:</strong> ART 130 with a minimum C grade</td>
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<tr>
<td>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.</td>
</tr>
<tr>
<td><strong>ART 232</strong> Advanced Painting and Drawing 3 credits</td>
</tr>
<tr>
<td><strong>Prerequisites:</strong> ART 104, ART 230 with a minimum C grade</td>
</tr>
<tr>
<td>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 techniques. Includes classroom critiques, outside assignments, and possible field trips. [Spring offering]</td>
</tr>
<tr>
<td><strong>ART 233</strong> Watercolor Painting 3 credits</td>
</tr>
<tr>
<td><strong>Prerequisite:</strong> ART 102 with a minimum C grade or permission of instructor</td>
</tr>
<tr>
<td>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, tempera, and wash and acquires a basic understanding of the proper selection of paper, brushes, paints and equipment.</td>
</tr>
<tr>
<td><strong>ART 240</strong> Raku Workshop 3 credits</td>
</tr>
<tr>
<td><strong>Prerequisite:</strong> previous ceramics experience</td>
</tr>
<tr>
<td>Introduction to the Raku process. Students spend an intensive six-week period creating, glazing, and firing functional and sculptural ceramic objects.</td>
</tr>
<tr>
<td><strong>ART 241</strong> Sculpture II 3 credits</td>
</tr>
<tr>
<td><strong>Prerequisite:</strong> ART 141 with a minimum C grade</td>
</tr>
<tr>
<td>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.</td>
</tr>
<tr>
<td><strong>ART 250</strong> Printmaking II 3 credits</td>
</tr>
<tr>
<td><strong>Prerequisite:</strong> ART 150 with a minimum C grade</td>
</tr>
<tr>
<td>Continued exploration and development of surface, relief, and intaglio techniques.</td>
</tr>
<tr>
<td><strong>ART 280</strong> Special Studies in Drawing 3 credits</td>
</tr>
<tr>
<td><strong>Prerequisites:</strong> ART 102, ART 104 with a minimum 3.0 GPA and/or divisional permission</td>
</tr>
<tr>
<td><strong>ART 281</strong> Special Studies in Art History 3 credits</td>
</tr>
<tr>
<td><strong>Prerequisites:</strong> completion of 15 credits of art/architecture history with minimum 3.0 GPA, sophomore status and divisional permission</td>
</tr>
<tr>
<td>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 offerings]</td>
</tr>
</tbody>
</table>
COURSES

ART 291  Cooperative Education  Visual Arts  3 credits
Integration of classroom study and lab work with specific planned period of learning through job experience. Based on an individualized learning contract, designed for Advertising Design and Digital Media Arts majors who have demonstrated advanced skill levels and for those who have potential to perform professionally in a work environment.
270 work experience hours

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 033 or MAT 041
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 and light truck fuel systems in use today. Coverage includes fuel basics, alternative fuels, electronic fuel injection system applications and on-board diagnostics (OBD II) 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/electronic principles are used in current automotive systems. Subjects include vehicle module communications, starting and charging systems, wiring diagrams, chassis wiring service, occupant restraint systems, 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 and light trucks, including computer-controlled anti-lock braking systems with traction and stability control. 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/2 laboratory hours

AUT 122  Internship in Automotive Technology I  1 credit
Prerequisites: AUT 110, AUT 111 with a minimum C grade
Corequisites: 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 211  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
COURSES

AUT 223  Internship in Automotive Technology – Independent Study  1 credit
Prerequisites: AUT 114, AUT 115, AUT 122, AUT 123, AUT 211, AUT 212, AUT 213, AUT 221, AUT 222, AUT 224, AUT 225
Application of knowledge acquired from lecture and lab instruction to gain relevant, practical on-the-job experience in repairing customer vehicles in an actual automotive service facility. An experienced service employee within the business supervises the student/apprentice and works with the automotive program coordinator in developing goals and evaluating performance.  320 work experience 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 reinstallament 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 Infinity Flight Group 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 hydropplaning. 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
Corequisites: 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 131, successful grade on FAA private pilot computer exam – airplanes
Corequisite: AVI 113 or AVI 114
Programs for the student who has met the requirements for the private pilot certificate. Consists of approximately 50 hours of flight training. Special fee required.  1 lecture/3 laboratory hours

AVI 203  Aircraft Components  3 credits
Prerequisites: AVI 114 with a minimum C grade
Corequisite: AVI 231 or MAT 115
Continuation of flight training to obtain the commercial pilot 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 208  Aviation Seminar  1 credit
Guest speakers explain their role in the industry and share insights concerning prerequisites experience, the interview process, and prospects for employment.  1 lecture hour

AVI 213  Flight III  3 credits
Prerequisites: AVI 214 with a minimum C grade
Corequisite: AVI 231 or MAT 115
Continuation of flight training to obtain the commercial pilot 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 212 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
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: Helicopter Commercial Certificate with Instrument Rating; FAA-approved Medical; proof of U.S. citizenship or TSA approval
Students are expected to acquire the aeronautical skill necessary to meet requirements for the Single Engine Land and Commercial Certificate with Instrument Rating. Consists of 70 hours of flight training or the time needed to meet FAA Practical Test Standards and Airman Certification Standards. Be advised additional time may be needed to meet the minimum standards. Fee required.
1 lecture/3 laboratory hours

AVI 217 Flight VI 1 credit
Prerequisites: Single Engine Land Commercial Pilot Instrument Rating; FAA-approved Medical; proof of U.S. citizenship or TSA approval
An independent study course involving self-study, ground instruction, simulation, and flight training. Students develop the proficiency, knowledge, and skills to complete the required practical examination to add a multi-engine class instrument rating to their single-engine commercial certificate and instrument rating. This training and assessment consists of 12.5 hours in a multi-engine aircraft.
1 lecture/1 laboratory hour

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
Prerequisite: 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

AVI 250 Airline Transport Pilot (ATP) Prep I 6 credits
Prerequisite: AVI 216
An independent study course involving self-study, ground instruction, use of simulation devices, and flight training. Students develop the proficiency, knowledge, and skills to complete the required day and night, VFR and IFR, cross-country hours for graduation to the ATP Prep II course. This training and assessment consists of 112.5 hours in single-engine aircrafts. Fee required.
2 lecture/6 laboratory hours

AVI 251 Airline Transport Pilot (ATP) Prep II 3 credits
Prerequisite: AVI 250
An independent study course involving self-study, ground instruction, use of simulation devices, and flight training. Students develop the proficiency, knowledge, and skills to complete the required day and night, VFR and IFR, cross-country hours for graduation of the Airline Transport Pilot certificate program. This training and assessment consists of 72 hours in single- and multi-engine aircrafts. Fee required.
1 lecture/3 laboratory hours

BCT — Building Construction Technology

BCT 101 Construction Graphics 3 credits
Corequisite: BCT 110 or divisional permission
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/2 laboratory hours

BCT 104 Codes for Construction and Design 3 credits
Prerequisites: BCT 110, BCT 120
An overview of regulations for design and/or construction of residential 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 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

BIO 101  General Biology I  4 credits
Prerequisites: high school biology or BIO 100; high school chemistry or CHE 100; MAT 135 or equivalent
Corequisite: ENG 101
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. 3 lecture/3 laboratory hours

BIO 102  General Biology II  4 credits
Prerequisite: BIO 101 with a minimum C grade
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. 3 lecture/3 laboratory hours

BIO 103  Anatomy and Physiology I  4 credits
Prerequisite: proficiency in basic algebra
Corequisite: ENG 101
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.] 3 lecture/3 laboratory hours

BIO 104  Anatomy and Physiology II  4 credits
Prerequisite: BIO 103 with a minimum C grade or permission of course coordinator
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.] 3 lecture/3 laboratory hours

BIO 106  Human Anatomy  4 credits
Prerequisite: MAT 037 (or MAT 037A and 037B)
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. (Design for programs requiring a one-semester human anatomy course; does not satisfy requirements in biology or health programs.) 3 lecture/2 laboratory hours

BIO 113  Biological Science Concepts  3 credits
Prerequisite: MAT 037 (or MAT 037A and 037B)
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. 2 lecture/2 laboratory hours

BIO 114  Environmental Science Concepts  3 credits
Prerequisite: ENG 024 or equivalent proficiency
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. 3 lecture hours

BIO 115  Microbiological Science Concepts  3 credits
Prerequisite: ENG 101 or permission of instructor
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.] 3 lecture hours

BIO 201  Microbiology  4 credits
Prerequisite: BIO 101 or BIO 103 with a minimum C grade or permission of course coordinator
Explores morphology, taxonomy, and metabolism of microbes with emphasis on fungi, protozoa, helminths, viruses and bacteria. Covers the role of microorganisms 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. 3 lecture/3 laboratory hours
### BIO 202  Woody Plants  4 credits

*Prerequisite:* BIO 101 or OHT 101 or permission of course coordinator

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]

3 lecture/3 laboratory hours

### BIO 203  Entomology  4 credits

*Prerequisite:* BIO 101 or BIO 102 or permission of course coordinator

Intensive survey of the orders of insects, covering comparative anatomy, life cycles, physiology and economic importance. Includes management, preservation and identification methods. [Fall offering]

3 lecture/3 laboratory hours

### BIO 204  Ecology  4 credits

*Prerequisite:* BIO 101 with a minimum C grade  
*Corequisite:* BIO 102

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.

3 lecture/3 laboratory hours

### 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 with a minimum C grade

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 105  Business Writing  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 125

Basics of budgeting, buying, income tax, investments, home ownership, and insurance along with emphasis on wills and trusts.

3 lecture hours

### BUS 111  Sports Law  3 credits

Examines legal issues that impact the world of sports and sports management. Affecting professional, intercollegiate and other areas of athletics, matters explored include those involving agencies, contracts, torts, crimes, gender, disabilities, antitrust, internationalism, drugs, intellectual property, and alternative dispute resolution.

3 lecture hours

### BUS 202  Customer Orientation  3 credits

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.

3 lecture hours
BUS 205  Business Statistics I  3 credits
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.  
3 lecture hours

BUS 206  Business Statistics II  3 credits
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.  
3 lecture hours

BUS 209  Business Communications  3 credits
Prerequisite: ENG 101 with a minimum C grade 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.  
3 lecture hours

BUS 210  Principles of Management  3 credits
Prerequisite: ENG 101 with a minimum C grade
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.  
3 lecture hours

BUS 211  Funeral Service Internship I  2 credits
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 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.  
16 work experience/1 seminar hour per week

BUS 218  Principles of Financial Management  3 credits
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]  
3 lecture hours

BUS 225  Employee Motivation and Leadership  3 credits
Presents significant achievements in the study of leadership and work motivation, motivational and leadership methods and procedures, plus practical applications of research theory.  
3 lecture hours

BUS 230  Global Environment of Business  3 credits
Prerequisite: ENG 101 with a minimum C grade
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.  
3 lecture hours

BUS 231  International Dimensions of Management  3 credits
Prerequisites: ACC 106 or ACC 111 or permission of instructor; ENG 101 with a minimum C grade
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]  
3 lecture hours

BUS 232  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. [occasional offering]  
6 lecture hours

BUS 233  Real Estate Investments  3 credits
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]  
3 lecture hours

BUS 234  Introduction to Supply Chain Management  3 credits
Prerequisites: ACC 106 or ACC 111; ACC 205 or ACC 112; ENG 101 with a minimum C grade; IST 101, IST 102, or CIS 175; MAT 125 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.  
3 lecture hours

BUS 235  Entrepreneurship  3 credits
Prerequisites: ACC 106 or ACC 111 or permission of instructor
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.  
3 lecture hours

BUS 236  Business Statistics I  3 credits
Prerequisite: ENG 101 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.  
3 lecture hours

BUS 237  Business Statistics II  3 credits
Prerequisite: BUS 236 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.  
3 lecture hours

BUS 238  Employee Motivation and Leadership  3 credits
Presents significant achievements in the study of leadership and work motivation, motivational and leadership methods and procedures, plus practical applications of research theory.  
3 lecture hours

BUS 239  Human Resource Management  3 credits
Prerequisite: ENG 101 with a minimum C grade
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.  
3 lecture hours

BUS 244  Introduction to Supply Chain Management  3 credits
Prerequisites: ACC 106 or ACC 111; ACC 205 or ACC 112; ENG 101 with a minimum C grade; IST 101, IST 102, or CIS 175; MAT 125 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.  
3 lecture hours

BUS 260  Accounting II  3 credits
Prerequisite: BUS 250
Study of financial statements; income (loss) and statement of retained earnings; statement of cash flows and statement of shareholders equity; cost versus market; business combinations; and leases.  
3 lecture hours

BUS 261  Accounting I  3 credits
Prerequisite: BUS 205
Principles of financial accounting and accounting information systems; financial statement analysis; cash flow; capital asset management; and working capital management.  
3 lecture hours

BUS 262  Accounting II  3 credits
Prerequisite: BUS 261
Study of financial statements; income (loss) and statement of retained earnings; statement of cash flows and statement of shareholders equity; cost versus market; business combinations; and leases.  
3 lecture hours

BUS 263  Accounting I  3 credits
Prerequisite: BUS 205
Principles of financial accounting and accounting information systems; financial statement analysis; cash flow; capital asset management; and working capital management.  
3 lecture hours

BUS 264  Accounting II  3 credits
Prerequisite: BUS 263
Study of financial statements; income (loss) and statement of retained earnings; statement of cash flows and statement of shareholders equity; cost versus market; business combinations; and leases.  
3 lecture hours

BUS 265  Accounting I  3 credits
Prerequisite: BUS 205
Principles of financial accounting and accounting information systems; financial statement analysis; cash flow; capital asset management; and working capital management.  
3 lecture hours

BUS 270  Business Statistics II  3 credits
Prerequisite: BUS 265
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.  
3 lecture hours

BUS 271  Business Statistics I  3 credits
Prerequisite: BUS 205
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.  
3 lecture hours

BUS 272  Business Statistics II  3 credits
Prerequisite: BUS 271
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.  
3 lecture hours

BUS 273  Business Statistics I  3 credits
Prerequisite: BUS 205
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.  
3 lecture hours

BUS 274  Business Statistics II  3 credits
Prerequisite: BUS 273
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.  
3 lecture 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  
*Prerequisites: high school chemistry or CHE 100; 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** Physical Chemistry I 5 credits  
*Prerequisite: CHE 102  
Corequisite: ENG 101*  
Covers fundamentals of thermodynamics, and statistical mechanics.  
5 lecture 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 recommended; MAT 037 (or MAT 037A and 037B) or equivalent  
Corequisite: ENG 101*  
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 201** Organic Chemistry I 5 credits  
*Prerequisite: CHE 101 with a minimum C grade  
Corequisite: ENG 101*  
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  
Corequisite: ENG 101*  
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 203** 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  
Corequisite: ENG 101*  
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 at the conclusion of the project period. [Fulfills a technical elective requirement in the Biology and Chemistry programs.]  
5 laboratory hours per week
COURSES

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.

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. 2 lecture/2 laboratory hours

CIV — Civil Engineering Technology

CIV 101 Surveying I 3 credits
Corequisites: MAT 115 or divisional permission; 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. 2 lecture/3 laboratory hours

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 platemeter. Applies AutoCAD and land development software, plus “Total Station” survey equipment for traversing, radial stakeout, and layout of horizontal curves. 2 lecture/3 laboratory hours

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. 3 lecture hours
CIV 104 Applied Mechanics 3 credits
Prerequisite: MAT 115 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 and friction. [Spring offering] 3 lecture hours

CIV 106 Mechanics 3 credits
Prerequisite: MAT 115 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. 3 lecture hours

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 hydrolgy. Lab projects involve roadway designing. [Spring offering] 2 lecture/2 laboratory hours

CIV 217 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 222 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/2 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 104 Introduction to TV Production 3 credits
Prerequisite: 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 credits
Prerequisite: 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 credits
Prerequisite: 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 credits
Prerequisites or Corequisites: 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 credits
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 credits
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 147 Introduction to Story 3 credits
Aimed at the analysis, deconstruction, and construction of story. Analyzing a series of films, television shows, graphic novels, video games and transmedia properties, students explore the basics of character development, narrative, arc, structure, and genre. 2 lecture/2 laboratory hours

CMN 151 Introduction to Radio 3 credits
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 credits
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. 2 lecture/2 studio hours

CMN 161 Writing for Media 3 credits
Prerequisite: ENG 101
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
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMN 201</td>
<td>Persuasion and Propaganda</td>
<td>3</td>
<td>CMN 111 or CMN 112</td>
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<tr>
<td></td>
<td>Inquiry into the forces of persuasion and propaganda as they exist in a technological society and how they influence beliefs, attitudes and actions.</td>
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<td>3 lecture hours</td>
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<tr>
<td>CMN 211</td>
<td>Interpersonal Communication in Human Relations</td>
<td>3</td>
<td>CMN 111 or CMN 112</td>
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<td>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.</td>
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<td>3 lecture hours</td>
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<tr>
<td>CMN 214</td>
<td>Diversity and Global Perspective, Communication in the U.S.</td>
<td>3</td>
<td>ENG 101 or equivalent English skills</td>
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<td>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.</td>
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<td>3 lecture hours</td>
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<tr>
<td>CMN 215</td>
<td>Communication and Gender</td>
<td>3</td>
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<td></td>
<td>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.</td>
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<tr>
<td>CMN 231</td>
<td>Journalism II</td>
<td>3</td>
<td>ENG 101</td>
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<td>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.</td>
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<td>3 lecture hours</td>
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<tr>
<td>CMN 241</td>
<td>Applied Field Production for Video</td>
<td>3</td>
<td>CMN 141, CMN 142, CMN 143</td>
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<td>with a minimum C grade</td>
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<td>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.</td>
<td></td>
<td>2 lecture/2 laboratory hours</td>
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<tr>
<td>CMN 242</td>
<td>Advanced Film Production</td>
<td>3</td>
<td>CMN 141, CMN 142, CMN 143, CMN 241</td>
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<td></td>
<td>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.</td>
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<td>2 lecture/2 studio hours</td>
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<tr>
<td>CMN 243</td>
<td>Cinematography</td>
<td>3</td>
<td>CMN 141, CMN 142</td>
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<td>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 hi-definition image acquisition.</td>
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<td>2 lecture/2 studio hours</td>
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<tr>
<td>CMN 250</td>
<td>Announcing for Radio and Electronic Media</td>
<td>3</td>
<td>CMN 151 with a minimum C grade</td>
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<td>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.</td>
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<td>2 lecture/2 studio hours</td>
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<tr>
<td>CMN 251</td>
<td>Applied Radio Programming and Production</td>
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<td>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.</td>
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<td>2 lecture/2 studio hours</td>
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<tr>
<td>CMN 252</td>
<td>Digital Audio Production II</td>
<td>3</td>
<td>CMN 153</td>
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<td></td>
<td>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 multi-layered recordings using live talent in a studio environment.</td>
<td></td>
<td>2 lecture/2 laboratory hours</td>
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<tr>
<td>CMN 253</td>
<td>Live Sound Reinforcement</td>
<td>3</td>
<td>ETT 102 or permission of coordinator</td>
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<td>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.</td>
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<td>2 lecture/2 laboratory hours</td>
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<tr>
<td>CMN 254</td>
<td>Sound Design for the Entertainment Industry</td>
<td>3</td>
<td>CMN 153, CMN 254</td>
</tr>
<tr>
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<td>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.</td>
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<td>1 lecture/4 laboratory hours</td>
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<tr>
<td>CMN 260</td>
<td>Convergence Newsroom</td>
<td>3</td>
<td>CMN 131</td>
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<td>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.</td>
<td></td>
<td>2 lecture/2 laboratory hours</td>
</tr>
</tbody>
</table>
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] 3 lecture hours

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 MCCC 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

COS — Computer Science

COS 101 Introduction to Computer Science 4 credits
Prerequisite: COS 102, IST 107, IST 108, IST 109, or IST 123
Corequisite: COS 146 or higher
Introduces both majors and non-majors to the concepts and topics of computer science, including computer architecture, algorithm analysis, operating systems, and programming languages. Students develop algorithmic thinking and abstraction using a 3-D animation programming language and MATLAB, a numerical programming tool for scientists and engineers. 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
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] 4 lecture 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
### COURSES

**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

### CSW — College Success and Wellness

**CSW 100**  College Success and Personal Wellness  2 credits
A comprehensive orientation to the college experience providing academic and personal wellness management tools. Topics include general study skills, academic technology, introduction to college resources and services, and healthy living.  2 lecture hours

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**DAN — Dance**

**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
Prerequisite: CRJ 104 or permission of instructor
Introduction to classical ballet terminology, forms, and techniques. Emphasizes body alignment and physical skill needed for proper classical ballet movements. [Spring offering]  1 lecture/2 studio hours

**DAN 105**  Jazz Dance I  2 credits
Prerequisite: DAN 102 or permission of instructor
Introduction to the techniques and movement skills of modern dance, including basic body skills, placement, alignment, and continuity. [Fall offering]  1 lecture/2 studio hours

**DAN 112**  Ballet II  2 credits
Prerequisite: DAN 102 or permission of instructor
Study of ballet technique on an intermediate level. [Spring offering]  1 lecture/2 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]  1 lecture/2 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]  1 lecture/2 studio hours

**DAN 116**  Studio Dance Technique I  3 credits
**DAN 117**  Studio Dance Technique II  3 credits
**DAN 118**  Studio Dance Technique III  3 credits
**DAN 119**  Studio Dance Technique IV  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 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

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**GE**

[ ocasional offering]  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
DMA — Digital Media Arts

DMA 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 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 studio 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: DMA 144 or DMA 145
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 non-linear interactivity and animation.
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 201 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 dynamic 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 210 Computer Animation I 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 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 221 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 222 Computer Animation II 3 credits
Prerequisite: DMA 225 with a minimum C grade or divisional permission
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
DRA 224 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

DRA 246 Web Design III: Advanced Project 3 credits
*Prerequisites:* DMA 110 and DMA 245 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. [Spring offering]
1 lecture/4 studio hours

DRA 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

DRA 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

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

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, DMA 245 or divisional permission
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 or divisional permission
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 218 3-D Modeling /3-D Printing 3 credits
*Prerequisite:* MET 122 or advisor permission
An introduction to 3-D solids modeling and printing software. Students build a prototype model using SolidWorks software and print a 3-D model to explore the basic size and look of a product or machine part. Orthographic drawings with dimensions are also produced for part building using traditional machining techniques.
2 lecture/2 laboratory hours

DRA 238 Advanced Computer-Aided Design 3 credits
*Prerequisite:* DMA 190
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: DRA 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: DRA 238 with a minimum C grade
An introduction to solids modeling and rendering software. Students explore the capabilities and potential 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

ECO 111 Macroeconomics 3 credits
Prerequisites: ENG 101 and MAT 135 or MAT 140 with a minimum C grade
Analysis of the determinants of aggregate income, output, employment and price level under various market conditions. Includes national income and product account, consumption and investment theory, government stabilization via fiscal and monetary policy, macroeconomic impact of international trade and finance, and inflation/unemployment trade-off controversies.
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.
3 lecture hours

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.
3 lecture hours

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.
3 lecture hours

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.
2 lecture/60 practicum hours

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.
2 lecture/60 practicum hours

EDU 210 Education Field Experience 6 credits
Prerequisites: 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: EDU 109 and SOC 104, or minimum C grade in EDU 102 and EDU 201, and 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]
3 lecture hours
### COURSES

**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.  
3 lecture hours

**EET — Electronics Engineering Technology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite(s)</th>
<th>Description</th>
<th>Lecture/Laboratory Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 130</td>
<td>Fundamentals of Electronics</td>
<td>3</td>
<td>MAT 037 (or MAT 037A and 037B)</td>
<td>Introduction to DC and AC circuits, electromagnetic devices, electronic components, and analog and digital circuits. For non-electronics majors.</td>
<td>2 lecture/2 laboratory hours</td>
</tr>
<tr>
<td>EET 132</td>
<td>Electronic Devices and Circuits</td>
<td>4</td>
<td>EET 130</td>
<td>Covers discrete solid state devices (diodes, BJTs, FETs) and circuits in which they are used: power supplies, amplifiers, and switches. Study involves analog as well as digital devices and circuits.</td>
<td>3 lecture/3 laboratory hours</td>
</tr>
<tr>
<td>EET 138</td>
<td>Introduction to Electronics I</td>
<td>4</td>
<td>MAT 135</td>
<td>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.</td>
<td>3 lecture/3 laboratory hours</td>
</tr>
<tr>
<td>EET 139</td>
<td>Introduction to Electronics II</td>
<td>4</td>
<td>EET 138 or equivalent</td>
<td>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.</td>
<td>3 lecture/3 laboratory hours</td>
</tr>
<tr>
<td>EET 140</td>
<td>Electronic Construction</td>
<td>2</td>
<td>EET 130</td>
<td>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.</td>
<td>1 lecture/3 laboratory hours</td>
</tr>
<tr>
<td>EET 141</td>
<td>Electrical Wiring and Cabling</td>
<td>3</td>
<td>EET 130</td>
<td>Focus on electrical wiring techniques starting with 120/240 volts. Instruction for adding connectors to and installing coax, CAT5/6, and fiber optic cables emphasizes the codes and standards to be followed along with the correct tools to be used. Class time allotted equally between lectures reinforced by hands-on practice.</td>
<td>2 lecture/2 laboratory hours</td>
</tr>
<tr>
<td>EET 143</td>
<td>Advanced Electronic Construction</td>
<td>3</td>
<td>EET 130, EET 140</td>
<td>Extends the teachings of EET 140 (i.e., printed circuit boards and chassis fabrication), with focus on manual skills required of technicians in the workplace. More complex projects are built, some of which may involve surface mount technology.</td>
<td>2 lecture/3 laboratory hours</td>
</tr>
<tr>
<td>EET 144</td>
<td>DC/AC Electric Circuits</td>
<td>4</td>
<td>MAT 135</td>
<td>Introduces the concept of electricity, focusing on both DC and AC circuits. Emphasizes fundamental laws and theorems relating to series and parallel circuits. Lab experiments relate to and reinforce lecture content.</td>
<td>3 lecture/3 laboratory hours</td>
</tr>
<tr>
<td>EET 214</td>
<td>Communications Electronics</td>
<td>4</td>
<td>EET 219</td>
<td>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.</td>
<td>3 lecture/3 laboratory hours</td>
</tr>
<tr>
<td>EET 215</td>
<td>Fiber Optics</td>
<td>4</td>
<td>EET 130 or EET 138 or MAT 135 or equivalent</td>
<td>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.</td>
<td>3 lecture/2 laboratory hours</td>
</tr>
<tr>
<td>EET 219</td>
<td>Electronic Networks</td>
<td>4</td>
<td>EET 139 or EET 144</td>
<td>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.</td>
<td>3 lecture/3 laboratory hours</td>
</tr>
<tr>
<td>EET 230</td>
<td>Linear Integrated Circuits</td>
<td>4</td>
<td>EET 219 or EET 131</td>
<td>Covers the basic building blocks of linear systems, such as inverting and non-inverting amplifiers, comparators, and filters.</td>
<td>3 lecture/3 laboratory hours</td>
</tr>
<tr>
<td>EET 251</td>
<td>Digital Circuit Fundamentals</td>
<td>4</td>
<td>EET 130 or EET 139 or EET 144</td>
<td>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.</td>
<td>3 lecture/3 laboratory hours</td>
</tr>
<tr>
<td>EET 263</td>
<td>Digital Technology – Introduction to Microprocessors and Assembly Language</td>
<td>4</td>
<td>EET 251</td>
<td>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.</td>
<td>3 lecture/3 laboratory hours</td>
</tr>
<tr>
<td>EET 266</td>
<td>Programmable Logic Controllers</td>
<td>4</td>
<td>EET 251</td>
<td>Introduces the theory and practical concepts of programmable logic controllers and their applications within industrial or manufacturing environments. Topics include PLC components, digital logic, ladder logic design, and software programming. Corresponding labs reinforce lectures with practical hands-on programming of Allen-Bradley PLC units using RSLogix software.</td>
<td>3 lecture/3 laboratory hours</td>
</tr>
</tbody>
</table>
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 on topics 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: ENG 023 or 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 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 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. Exposed to the beginning principles of critical reading and thinking, students analyze text to identify facts, fallacies, claims, premises, and arguments. Students are expected to take notes, improve vocabulary, and independently interpret text. 4 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

ENG 102 English Composition II 3 credits
Prerequisite: ENG 101 with a minimum C grade
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. 3 lecture hours

ENG 112 English Composition II with Speech 3 credits
Prerequisite: ENG 101 with a minimum C grade
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. 3 lecture hours

ENG 201 Introduction to Literature: Drama 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
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. [Spring offering - alternate semesters] 3 lecture hours

ENG 202 Introduction to Literature: Novel 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
Study of novels from various periods selected for their intrinsic value and as representative types of fiction. [Spring offering] 3 lecture hours

ENG 203 World Literature I 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
A survey of important literary works from cultures around the world dating from ancient times through the 17th century. [Fall offering] 3 lecture hours

ENG 204 World Literature II 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
A survey of important literary works from cultures around the world from the 17th century through the present day. [Spring offering] 3 lecture hours

ENG 205 American Literature I 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
Introduction to and selective study of authors representing the enduring traditions and styles of American literature from the Puritan period through the Civil War. [Fall offering] 3 lecture hours

ENG 206 American Literature II 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
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. [Spring offering] 3 lecture hours
### COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Prerequisite</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 208</td>
<td>Modern American Novel</td>
<td>3 credits</td>
<td>minimum C grade in ENG 102 or divisional permission</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. [Fall offering]</td>
</tr>
<tr>
<td>ENG 211</td>
<td>Shakespeare</td>
<td>3 credits</td>
<td>minimum C grade in ENG 102 or divisional permission</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. [Occasional offering]</td>
</tr>
<tr>
<td>ENG 213</td>
<td>African American Literature</td>
<td>3 credits</td>
<td>minimum C grade in ENG 102 or divisional permission</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. [Spring offering]</td>
</tr>
<tr>
<td>ENG 215</td>
<td>Creative Writing I</td>
<td>3 credits</td>
<td>minimum C grade in ENG 102 or divisional permission</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>
</tr>
<tr>
<td>ENG 216</td>
<td>Literature Into Film</td>
<td>3 credits</td>
<td>minimum C grade in ENG 102 or divisional permission</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. [Fall and Spring offering]</td>
</tr>
<tr>
<td>ENG 218</td>
<td>Creative Writing II</td>
<td>3 credits</td>
<td>minimum C grade in ENG 102 or divisional permission</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>
</tr>
<tr>
<td>ENG 220</td>
<td>Science Fiction Literature</td>
<td>3 credits</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
<td>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. [Spring offering]</td>
</tr>
<tr>
<td>ENG 221</td>
<td>Women in Literature</td>
<td>3 credits</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
<td>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. [Fall offering]</td>
</tr>
<tr>
<td>ENG 222</td>
<td>Children’s Literature</td>
<td>3 credits</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
<td>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. [Fall and Spring offering]</td>
</tr>
<tr>
<td>ENG 227</td>
<td>English Literature I</td>
<td>3 credits</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
<td>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. [Fall offering - alternate semesters]</td>
</tr>
<tr>
<td>ENG 228</td>
<td>English Literature II</td>
<td>3 credits</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
<td>Survey of representative English literature from the Romantic and Victorian periods up to the present. [Spring offering - alternate semesters]</td>
</tr>
<tr>
<td>ENG 231</td>
<td>Literature of AIDS: Confronting Catastrophe</td>
<td>3 credits</td>
<td>minimum C grade in ENG 102 or divisional permission</td>
<td>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. [Occasional offering]</td>
</tr>
</tbody>
</table>
Diversity and Global Perspective

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—all with aspects of the writers’ politics and the social milieu that form their work. [occasional offering] 3 lecture hours

Humanities

ENG 238 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 they 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. [occasional offering] 3 lecture hours

ENG 239 Literature of War and Conflict 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
Surveys literary responses to war and conflict with particular focus on the psychological effects of warfare. Examines multiple genres, cultures, eras, and viewpoints, but primary focus may rest on a particular era or conflict. May include texts by Homer, Sun Tzu, Stephen Ambrose, Oppenheimer, Hemingway, Tim O’Brien, and Elie Wiesel. [occasional offering] 3 lecture hours

ENG 256 Fantasy Literature 3 credits
Prerequisite: minimum C grade in ENG 102 or divisional permission
Explores fantasy 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. [Fall offering] 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

ERG 111 Alternative Energy Sources 3 credits
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

ERG 112 Energy Audit and Weatherization 3 credits
Prerequisite: placement in college-level math and English
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

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 041 ESL Foundation in Speech Concepts 4 credits
Prerequisite: score of 60 or lower on ESL Accuplacer Listening Test
Corequisites: ESL 042, ESL 043
Students begin to use basic speaking and listening strategies in English as a foreign language. Activities involve markers, syllables, high-frequency words, recognition of question words, intonation, stress, pronunciation, and dialogue. Listening to audio CDs improves aural comprehension and creates discussion points for stimulating conversation and language practice. Global topics initiate speaking and listening lessons. 4 lecture hours

ESL 042 ESL Foundation in Reading Concepts 4 credits
Prerequisite: score of 60 or lower on ESL Accuplacer Reading Test
Corequisites: ESL 041, ESL 043
Introduces a foundational understanding of language form and meaning through the study of vocabulary and reading content-based text. Reading lessons are initiated with global topics. 4 lecture hours

ESL 043 ESL Foundation in Grammar Concepts 4 credits
Prerequisite: score of 60 or lower on ESL Accuplacer Language Test
Corequisites: ESL 041, ESL 042
Introduces students to basic grammar connected in an American cultural context. Provides learners with useful and meaningful skills to apply beginning grammar necessary to communicate verbally and in writing. 4 lecture hours

ESL 051 ESL Speech Concepts I 4 credits
Prerequisite: score of 61-75 on ESL Accuplacer Listening Test or successful completion of ESL 041
Develops speaking and listening skills for high-beginner students. Emphasis on expanding vocabulary, accent reduction, and gaining fluency and confidence using English spontaneously. Idioms, grammatical forms, morphology, phonology, and etymology stressed. 4 lecture hours

ESL 052 ESL Reading and Critical Thinking I 4 credits
Prerequisite: score of 61-75 on ESL Accuplacer Reading Test or successful completion of ESL 042
Emphasis on increasing reading fluency and comprehension, improving vocabulary, and relying on context clues to understand texts. 4 lecture hours
ESL 053 ESL Writing Concepts I 4 credits
Prerequisite: score of 61-75 on ESL Accuplacer Language Test or successful completion of ESL 043 Emphasis on orienting students to basic sentence patterns and types, writing topical paragraphs, and organizing one-page essays. Critical reading and application of grammar stressed. 4 lecture hours

ESL 061 ESL Speech Concepts II 4 credits
Prerequisite: score of 76-88 on ESL Accuplacer Listening Test or successful completion of ESL 051 Spontaneous oral English for intermediate-level students. Reinforces ability to speak and listen effectively in a second language with stress on building fluency and vocabulary, accent reduction, word syntax, idioms, grammatical forms, morphology, phonology, and etymology. 4 lecture hours

ESL 063 ESL Reading and Critical Thinking II 4 credits
Prerequisite: score of 76-88 on ESL Accuplacer Reading Test or successful completion of ESL 052 Emphasis on developing and using academic and idiomatic vocabulary through reading narrative, expository and argumentative essays as well as longer readings. Exposure to critical analysis and interpretation of English texts. 4 lecture hours

ESL 071 ESL Speech Concepts III 4 credits
Prerequisite: score of 89-108 on ESL Accuplacer Listening Test or successful completion of ESL 061 Advanced speaking and listening. Themes of intercultural communication and global issues provide centerpiece of conversations and interactions. Developing higher skills in verbal and non-verbal communication, colloquial and idiomatic expressions and fluency, students present formal speeches, critiques, and feedback. 4 lecture hours

ESL 072 ESL Reading and Critical Thinking III 4 credits
Prerequisite: score of 89-108 on ESL Accuplacer Reading Test or successful completion of ESL 062 Further reinforces and refines reading skills, comprehension, vocabulary expansion and enhancing oral presentation and interpretation techniques as well as analytical thinking skills. 4 lecture hours

ESL 073 ESL Writing Concepts III 4 credits
Prerequisite: score of 89-108 on ESL Accuplacer Language Test or successful completion of ESL 063 Stresses spontaneous, fluent, and 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. 4 lecture hours

ESL 080 ESL TOEFL iBT Prep Course 2 credits
Prerequisite: minimum score of 60 on TOEFL test or a minimum intermediate level of English to be determined by the ESL program coordinator Corequisites: 06 and 07 level ESL courses at MCCC Online course prepares ESL students for TOEFL iBT (Internet-based test). Material covered offers many opportunities to practice in the Reading, Listening, Speaking, and Writing sections of the exam. Students may repeat this course up to three times to achieve desired TOEFL iBT score. Grade of “credit” / “no credit” based on time spent online.

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. 2 lecture/2 laboratory hours

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. 90 hours minimum

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. 3 lecture hours

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. 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 chronological 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

FAS 265 Fashion Internship 3 credits
Prerequisite: coordinator approval
Provides students with the unique opportunity to gain industry experience while earning college credit. Students complete a predetermined number of hours at an approved host location offering experience not found in the traditional classroom. 180 work experience 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

FIR 202 Water Supply for Fire Protection 3 credits
Explores water supply storage and distribution as well as efficient use of water at the fire scene. 3 lecture hours

FIR 230 Fire Protection Systems 3 credits
Study of various automatic detection and signaling devices and systems, automatic sprinklers, standpipes, and special extinguishing installations. 3 lecture hours

FIR 240 Fire Fighting Tactics 3 credits
Examines pre-fire planning, fire ground organization and problem-solving, and proper utilization of manpower and equipment. 3 lecture hours

FIR 250 Fire Department Organization 3 credits
Study of the history, methods, types, and principles of fire department organization and management. Emphasizes supervisory responsibilities and functions. 3 lecture hours
FIR 206  Fire Investigation  3 credits
Provides the fundamental and technical knowledge needed for proper fire scene interpretations, including recognizing and conducting origin and cause, preservation of evidence and documentation, scene security, motives of the firesetter, and types of fire causes.  3 lecture hours

FIR 208  Fire Department Safety and Health Administration  3 credits
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.  3 lecture hours

FIR 209  Fire Prevention and Code Enforcement II  3 credits
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.  3 lecture hours

FIR 211  Fire Investigation II  3 credits
Prerequisite: FIR 206
Provides advanced technical knowledge on rule of law, fire scene analysis, fire behavior, evidence collection and preservation, scene documentation, case preparation and courtroom testimony.  3 lecture hours

FRE — French

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.

FRE 101  Beginning French I  3 credits
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.  3 lecture hours

FRE 102  Beginning French II  3 credits
Prerequisite: FRE 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 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.  3 lecture hours

FRE 201  Intermediate French I  3 credits
Prerequisite: FRE 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 French. Spoken communication in French 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 Francophone culture, politics, and history. Fundamental grammar points are reviewed.  3 lecture hours

FRE 202  Intermediate French II  3 credits
Prerequisite: FRE 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 French. Spoken communication in French 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 Francophone culture, politics, and history. Fundamental grammar points are reviewed.  3 lecture hours

FUN — Funeral Service

FUN 203  Funeral Service Principles  3 credits
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.  3 lecture hours

FUN 206  Introduction to Funeral Service  3 credits
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.  3 lecture hours

FUN 215  Funeral Service Law  3 credits
Prerequisites: BLIS 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.  3 lecture hours

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 223  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 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 laboratory and/or discussion hours 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 hours seminar plus 224 hours of work experience

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 2-D and 3-D content creation.  1 lecture/4 laboratory hours

GAM 145  Game Programming I  3 credits  
Prerequisite: COS 101  
Corequisite: 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 importing 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

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GEO 101</td>
<td>Geography</td>
<td>3</td>
<td>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</td>
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</table>

### 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 — Humanities

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<tr>
<td>GER 101</td>
<td>Beginning German I</td>
<td>3</td>
<td>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</td>
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### HIS — History

#### HIS — Humanities / Historical Perspective

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<td>HIS 101</td>
<td>History of Western Civilization to 1648</td>
<td>3</td>
<td>Introduction to the political, social, cultural, and economic events that distinguished Western civilization to 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</td>
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### GEO 102 Cultural Geography

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<tr>
<td>GEO 102</td>
<td>Cultural Geography</td>
<td>3</td>
<td>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</td>
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## GenEd

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<th>GenEd</th>
<th>Humanities / Historical Perspective</th>
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<tr>
<td>GenEd</td>
<td>Humanities / Diversity and Global Perspective</td>
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<td>HIS 105</td>
<td>United States History to 1865</td>
<td>3</td>
<td>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</td>
</tr>
</tbody>
</table>

### HIS 106 United States History Since 1865

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIS 106</td>
<td>United States History Since 1865</td>
<td>3</td>
<td>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</td>
</tr>
</tbody>
</table>

### HIS 107 The Civil War

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIS 107</td>
<td>The Civil War</td>
<td>3</td>
<td>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</td>
</tr>
</tbody>
</table>

### HIS 109 African American History

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIS 109</td>
<td>African American History</td>
<td>3</td>
<td>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</td>
</tr>
</tbody>
</table>
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

HIS 112  World History to 1500 3 credits
[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 113  World History Since 1500 3 credits
[not recommended for students who have taken HIS 102]
Survey of world history from 1500 to the present, examining the development of societies in Asia, Europe, Africa, the Americas, and Oceania. Charts the development of individual societies in the Modern Age by focusing on interactions among diverse cultures and the driving forces of change such as industrialization/technology, nationalism and colonization/de-colonization. 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

HIS 213  Twentieth-Century World History 3 credits
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

HIS 214  The United States Since 1945 3 credits
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

HIS 215  The Holocaust and Other Genocides 3 credits
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

HIS 218  History of Latin America 3 credits
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

HIS 220  History of Daily Life in the Modern Western World 3 credits
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

HIS 221  History of American Women 3 credits
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

HIS 225  History of England 3 credits
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

HIS 226  History of New Jersey 3 credits
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

HIS 230  Special Topics in History 3 credits
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

HIS 231  Women in Antiquity 3 credits
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
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 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 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 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 mathematical 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 115 Food and Culture 3 credits
Prerequisite: HOS 111 Culinary Math 1 credit
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 117 Restaurant Operations 2 credits
Prerequisites: HOS 101, HOS 118, HOS 217
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

HOS 120 Introduction to the Hospitality Industry 3 credits
Covers basic management concepts in all areas of hospitality, including working with people, managing facilities, marketing, and managing money.

3 lecture hours

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
<table>
<thead>
<tr>
<th>COURSES</th>
<th>2017 - 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOS 124 Computerized Reservations</td>
<td>3 credits</td>
</tr>
<tr>
<td><em>Prerequisite:</em> computer literacy</td>
<td></td>
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<tr>
<td>Provides an understanding of the various facets of travel/tourism</td>
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<tr>
<td>reservations with an emphasis on developing skills in utilizing</td>
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<tr>
<td>automated reservation systems. Students work with simulated system</td>
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<tr>
<td>software widely used in the industry.</td>
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<tr>
<td>3 lecture hours</td>
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<tr>
<td>HOS 186 Table Service</td>
<td>3 credits</td>
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<tr>
<td><em>Corequisite:</em> HOS 111</td>
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<tr>
<td>Focus on dining room operations including all aspects of</td>
<td></td>
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<tr>
<td>merchandising and customer service. Students can earn a</td>
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<tr>
<td>certification for sale alcohol service through the National</td>
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<tr>
<td>Restaurant Association. Lab hours in the dining room reinforce</td>
<td></td>
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<tr>
<td>classroom discussion.</td>
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<tr>
<td>2 lecture/2 laboratory hours</td>
<td></td>
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<tr>
<td>HOS 203 Hospitality Purchasing</td>
<td>3 credits</td>
</tr>
<tr>
<td><em>Prerequisite:</em> HOS 111</td>
<td></td>
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<tr>
<td>Accepted practices for receiving, storing and issuing food and</td>
<td></td>
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<tr>
<td>nonfood products within the hospitality industry. Covers parking</td>
<td></td>
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<tr>
<td>major equipment, small wares, tableware, textiles, and vendor</td>
<td></td>
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<tr>
<td>services.</td>
<td></td>
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<tr>
<td>3 lecture hours</td>
<td></td>
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<tr>
<td>HOS 204 Hospitality Marketing</td>
<td>3 credits</td>
</tr>
<tr>
<td><em>Prerequisite:</em> HOS 111</td>
<td></td>
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<tr>
<td>Addresses marketing plans, market research, market segmentation,</td>
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<tr>
<td>positioning, consumer behavior, advertising, promotion, pricing</td>
<td></td>
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<tr>
<td>theory, and hospitality group sales.</td>
<td></td>
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<tr>
<td>3 lecture hours</td>
<td></td>
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<tr>
<td>HOS 205 Menu Planning/Costing and Design</td>
<td>2 credits</td>
</tr>
<tr>
<td><em>Prerequisite:</em> HOS 111</td>
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<tr>
<td>Applicable to a wide variety of food service operations, covers</td>
<td></td>
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<tr>
<td>pricing strategies and support systems, ordering, conversion of</td>
<td></td>
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<tr>
<td>recipes from small to large quantities, physical types of menus,</td>
<td></td>
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<tr>
<td>marketing strategies, and food preferences of the public. Special</td>
<td></td>
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<tr>
<td>emphasis on the planning of nutritional menus.</td>
<td></td>
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<tr>
<td>2 lecture hours</td>
<td></td>
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<tr>
<td>HOS 207 Grilling, Barbecuing, and Smoking</td>
<td>3 credits</td>
</tr>
<tr>
<td>Introduction to the principles, techniques and skills necessary to</td>
<td></td>
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<tr>
<td>prepare outdoor meals. Students prepare a wide variety of foods</td>
<td></td>
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<tr>
<td>using grilling, barbecuing, and smoking cooking techniques.</td>
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<tr>
<td>1 lecture/4 laboratory hours</td>
<td></td>
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<tr>
<td>HOS 208 Hospitality Law</td>
<td>3 credits</td>
</tr>
<tr>
<td>Introduction to hospitality law, its effect on hospitality</td>
<td></td>
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<tr>
<td>management, and the legal principles that govern the hospitality</td>
<td></td>
</tr>
<tr>
<td>industry.</td>
<td></td>
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<tr>
<td>3 lecture hours</td>
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</tr>
<tr>
<td>HOS 209 Garde Manger</td>
<td>3 credits</td>
</tr>
<tr>
<td><em>Prerequisites:</em> HOS 101 and HOS 118 with a minimum C grade</td>
<td></td>
</tr>
<tr>
<td>Addresses basic and advanced garde manger and charcuterie techniques</td>
<td></td>
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<tr>
<td>such as the preparation and serving of hot and cold hors d’oeuvres,</td>
<td></td>
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<tr>
<td>aspics, pates, mousses, terrines, and cold dishes along with advanced</td>
<td></td>
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<tr>
<td>techniques for the planning and arrangement of buffets. Covers table</td>
<td></td>
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<tr>
<td>arrangement and planning, creation of model nonedible food displays,</td>
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<tr>
<td>as well as manipulation of specialized tools to produce decorative</td>
<td></td>
</tr>
<tr>
<td>buffet items and showpieces such as ice sculptures, pastillage,</td>
<td></td>
</tr>
<tr>
<td>marzipan, and fondant.</td>
<td></td>
</tr>
<tr>
<td>1 lecture/4 laboratory hours</td>
<td></td>
</tr>
<tr>
<td>HOS 210 Applied Kitchen Skills – Cafe</td>
<td>3 credits</td>
</tr>
<tr>
<td><em>Prerequisites:</em> HOS 102, HOS 217</td>
<td></td>
</tr>
<tr>
<td>An advanced course in pantry and deli preparation and organization.</td>
<td></td>
</tr>
<tr>
<td>Developing speed skills with quantity production while following</td>
<td></td>
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<tr>
<td>industry guidelines for sanitation and safety, students demonstrate</td>
<td></td>
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<tr>
<td>proper plate presentation, including seasonal production, in a dining</td>
<td></td>
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<tr>
<td>room pantry.</td>
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<tr>
<td>1 lecture/4 laboratory hours</td>
<td></td>
</tr>
<tr>
<td>HOS 217 Professional Baking I</td>
<td>3 credits</td>
</tr>
<tr>
<td><em>Prerequisite:</em> MAT 037 (or MAT 037A and 037B)</td>
<td></td>
</tr>
<tr>
<td><em>Corequisite:</em> HOS 111</td>
<td></td>
</tr>
<tr>
<td>Fundamental principles and procedures for preparing baked goods,</td>
<td></td>
</tr>
<tr>
<td>pastries, and desserts. Promotes the understanding of baking</td>
<td></td>
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<tr>
<td>formulas in bakeshop production planning and ability to produce</td>
<td></td>
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<tr>
<td>high-quality items through the development of manual skills. Stresses</td>
<td></td>
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<tr>
<td>the use of equipment and supplies in a safe and sanitary manner.</td>
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<tr>
<td>Chef whites required.</td>
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<tr>
<td>1 lecture/4 laboratory hours</td>
<td></td>
</tr>
<tr>
<td>HOS 218 Professional Baking II</td>
<td>3 credits</td>
</tr>
<tr>
<td><em>Prerequisites:</em> HOS 111, HOS 118, HOS 217</td>
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</tr>
<tr>
<td>Intermediate principles and procedures for preparing baked</td>
<td></td>
</tr>
<tr>
<td>goods, specialty cakes, pastries and pies. Emphasizes producing</td>
<td></td>
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<tr>
<td>quality items through the development of manual skills, knowledge of</td>
<td></td>
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<tr>
<td>ingredients and proper use of advanced bakery formulas. Stresses use</td>
<td></td>
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<tr>
<td>of high-quality ingredients, equipment, advanced manual skills, and</td>
<td></td>
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<tr>
<td>safe and sanitary bakeshop practices.</td>
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<tr>
<td>1 lecture/4 laboratory hours</td>
<td></td>
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<tr>
<td>HOS 219 Professional Baking III</td>
<td>2 credits</td>
</tr>
<tr>
<td><em>Prerequisites:</em> HOS 118, HOS 217</td>
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</tr>
<tr>
<td>Advanced principles and procedures for preparing baked goods,</td>
<td></td>
</tr>
<tr>
<td>specialty cakes, pastries and pies, and other specialty desserts.</td>
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<tr>
<td>Emphasizes producing high-quality items.</td>
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<tr>
<td>1 lecture/3 laboratory hours</td>
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<tr>
<td>HOS 230 Experimental Kitchen</td>
<td>2 credits</td>
</tr>
<tr>
<td><em>Prerequisites:</em> HOS 101, HOS 111, HOS 118, MAT 120</td>
<td></td>
</tr>
<tr>
<td>Covers tastes and flavors (sweet, salt, bitter, sour, and umami).</td>
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</tr>
<tr>
<td>Students explore culinary herbs and spices, salts, peppers, oils,</td>
<td></td>
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<tr>
<td>vinegars, essences, fragrances, oleoresins, concentrates, freeze</td>
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<tr>
<td>dried fruit and vegetable products, and other flavor carriers used</td>
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<tr>
<td>in cooking and culinary research and development. Includes a hands-on</td>
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<tr>
<td>lab application of techniques learned.</td>
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<tr>
<td>1 lecture/3 laboratory hours</td>
<td></td>
</tr>
<tr>
<td>HOS 231 Meat, Poultry and Fish Fabrication</td>
<td>1 credit</td>
</tr>
<tr>
<td><em>Prerequisites:</em> HOS 101, HOS 118</td>
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<tr>
<td>Addresses the fundamentals of purchasing specifications; receiving,</td>
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<tr>
<td>handling, and storing meat and seafood; plus techniques for</td>
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<tr>
<td>fabricating cuts for professional kitchens.</td>
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<tr>
<td>2 laboratory hours</td>
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<tr>
<td>HOS 235 American Regional Cuisine</td>
<td>2 credits</td>
</tr>
<tr>
<td><em>Prerequisites:</em> HOS 102, HOS 109</td>
<td></td>
</tr>
<tr>
<td>Prepare, taste, serve, and evaluate traditional regional dishes of</td>
<td></td>
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<tr>
<td>America. Study and practices emphasize ingredients, flavor profiles,</td>
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<tr>
<td>preparations, and techniques representative of cuisines of the</td>
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<tr>
<td>United States.</td>
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<tr>
<td>1 lecture/3 laboratory hours</td>
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<tr>
<td>HOS 240 Classical Cuisine / Advanced International</td>
<td>2 credits</td>
</tr>
<tr>
<td><em>Prerequisites:</em> HOS 102, HOS 115</td>
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<tr>
<td>Students demonstrate a working knowledge in their approach to flavor</td>
<td></td>
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<tr>
<td>profiles by applying cooking methods practiced by each ethnic group</td>
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<tr>
<td>visited. Traditional preparation and plate presentation is</td>
<td></td>
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<tr>
<td>emphasized utilizing both classic and modern approaches.</td>
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<tr>
<td>1 lecture/3 laboratory hours</td>
<td></td>
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<tr>
<td>HOS 245 Chocolates and Confections / Retail Bakeshop</td>
<td>3 credits</td>
</tr>
<tr>
<td><em>Prerequisites:</em> HOS 218, HOS 219</td>
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<tr>
<td>The essentials for creating sculptures, forming simple centerpieces,</td>
<td></td>
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<tr>
<td>and preparing chocolates and other confections with soft, hard, and</td>
<td></td>
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<tr>
<td>liquid centers. Along with merchandising concepts, traditional and</td>
<td></td>
</tr>
<tr>
<td>contemporary production practices are explored for products</td>
<td></td>
</tr>
<tr>
<td>including pastillage, nougatine, and assorted sugar and chocolate</td>
<td></td>
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<tr>
<td>decorative pieces.</td>
<td></td>
</tr>
<tr>
<td>1 lecture/4 laboratory hours</td>
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</tbody>
</table>
COURSES

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
Prerequisite: HOS 218
How to produce and merchandise restaurant-style desserts. Along with an emphasis on dessert menu planning, production techniques are practiced involving plate-up, garnish, and component style desserts.
1 lecture/4 laboratory hours

HOS 248  Advanced Pastry  3 credits
Prerequisites: 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 250  Pastry Arts Practicum  2 credits
Prerequisites: HOS 247, HOS 248
Corequisite: HOS 111
Focus on practical skill sets – including those related to presentation, sanitation, and overall quality – required for pastry arts involving breads, quick breads, sweet dough, cookies, cake decorating, puff pastry, and pie production. Guidelines applied for the final exam match those of the nationally recognized Skills USA competition.
1 lecture/2 laboratory hours

HOS 251  Culinary Arts Practicum  2 credits
Prerequisites: HOS 210; HOS 235 or HOS 240
Encompasses hot and cold food preparation and presentation utilizing a market basket format. Students demonstrate knowledge and skills through production of a four-course menu in a practical exam. Guidelines applied for this practicum course match those of the nationally recognized Skills USA competition.
1 lecture/2 laboratory hours

HOS 267  Event Planning  3 credits
Prerequisite: HOS 204
Corequisite: ACC 108 or ACC 111
Examines the various aspects required in planning and implementing meetings, expositions, conventions, and other events large and small. Along with methods and strategies for overall project management and organization, special emphasis addresses budgeting, promotion, and designing the event environment.
3 lecture 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, 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
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.
3 lecture 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 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 140  **Kinesiology for Exercise Science** 3 credits  
*Prerequisite: HPE 103 with a minimum C grade*  
Open to all students interested in the study of human movement. Introduces the concepts of locomotion, forces, levers, and bio-mechanics. Topics include origins, insertions, innervations, and actions of prime movers for the musculoskeletal system.  
*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 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), they 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 104*  
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.  

**HRA — Heating, Refrigeration and Air Conditioning**  

**HRA 101  **Principles of Refrigeration / Air Conditioning I** 2 credits  
*Corequisite: MAT 037 (or MAT 037A and 037B)*  
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 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*  

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### IST — Information Systems Technology

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

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDITS</th>
<th>PREREQUISITES</th>
</tr>
</thead>
<tbody>
<tr>
<td>IST 033</td>
<td>Tech Studio</td>
<td>2</td>
<td>Prerequisite: instructor or advisor permission&lt;br&gt;Student must 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.</td>
</tr>
<tr>
<td>IST 101</td>
<td>Computer Concepts with Applications</td>
<td>3</td>
<td>Prerequisite: reading proficiency&lt;br&gt;Corequisite: ENG 034; MAT 037 (or MAT 037A and 037B) or equivalent proficiency&lt;br&gt;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.</td>
</tr>
<tr>
<td>IST 107</td>
<td>Introduction to C/C++ Programming</td>
<td>3</td>
<td>Prerequisites: proficiency in basic algebra, MAT 037 (or MAT 037A and 037B)&lt;br&gt;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-oriented programming. Extensive laboratory exercises reinforce lecture concepts.</td>
</tr>
<tr>
<td>IST 108</td>
<td>Introduction to Programming with Mobile Application Development</td>
<td>4</td>
<td>Prerequisites: MAT 037 or 042, or proficiency in basic algebra&lt;br&gt;Introduces computing and programming concepts, and explores mobile and Web technologies. Topics include variables, decision-making, iteration, lists, functions, decomposition, event-driven programming, databases, client-server computing, Web services, platforms, programming languages, animation, textual, and geolocation. Students learn by creating Android mobile applications using App Inventor, a visual programming language.</td>
</tr>
<tr>
<td>IST 109</td>
<td>Introduction to Programming</td>
<td>3</td>
<td>Prerequisites: proficiency in basic algebra, MAT 037 (or MAT 037A and 037B)&lt;br&gt;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.</td>
</tr>
<tr>
<td>IST 123</td>
<td>Programming in Visual Basic.NET</td>
<td>3</td>
<td>Prerequisite: IST 109&lt;br&gt;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.</td>
</tr>
<tr>
<td>IST 144</td>
<td>Website Development</td>
<td>4</td>
<td>Prerequisites: ENG 034; MAT 037 (or MAT 037A and 037B) or equivalent proficiency&lt;br&gt;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.</td>
</tr>
<tr>
<td>IST 208</td>
<td>Android Application Development</td>
<td>4</td>
<td>Prerequisite: COS 102 or equivalent&lt;br&gt;Introduces website development skills. Thorough examination of Hypertext Markup Language (HTML) includes navigations, tables, Cascading Style Sheets (CSS), images, audios, videos, and forms. Students learn the latest Web design and development technologies including HTML5, CSS3, JavaScript, and jQuery.</td>
</tr>
<tr>
<td>IST 209</td>
<td>Project Management Concepts</td>
<td>3</td>
<td>Prerequisites: ENG 034; MAT 037 (or MAT 037A and 037B) or equivalent proficiency&lt;br&gt;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.</td>
</tr>
<tr>
<td>IST 218</td>
<td>iOS Application Development</td>
<td>4</td>
<td>Prerequisite: COS 102 or equivalent&lt;br&gt;Introduces the tools and skills needed to create apps for iPhone and iPad. Students learn the Swift programming language and use it with Xcode 6 to create apps on the iOS 8 platform.</td>
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<tr>
<td>IST 222</td>
<td>PL/SQL Programming</td>
<td>3</td>
<td>Prerequisites: IST 123, IST 262&lt;br&gt;Introduces 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.</td>
</tr>
<tr>
<td>IST 244</td>
<td>Web Application Development</td>
<td>4</td>
<td>Prerequisites: IST 108, IST 109, IST 144; or COS 101, COS 102; or DMA 145 or equivalent&lt;br&gt;Introduction to server-side programming and database integration contributes to the creation of dynamic and interactive Web applications. Primary programming languages and technologies covered include ASP.NET, C#, SQL Server, and MVC (Models, Views and Controllers) programming model.</td>
</tr>
</tbody>
</table>
IST 250 Decision Support Using MS Excel 4 credits
Prerequisites: IST 102, IST 109, IST 123
Techniques for building complete Excel-based decision support systems in a highly accessible manner. Topics include referencing and names, functions and formulas, charts, pivot tables, macros, programming structures, building user interfaces, and VBA for optimization and simulation. The extended functionality topics include statistical analysis, the Solver and modeling, simulation, and working with large datasets.
3 lecture/2 laboratory hours

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.
2 lecture/2 laboratory hours

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.
2 lecture/2 laboratory hours

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.
2 lecture/2 laboratory hours

IST 259 Project Management 4 credits
How to select, initiate, operate, and control all types of projects, including how to manage risks and uncertainties. Equips students with the quantitative skills, knowledge of organizational issues, and insights into human behavior that are needed for effective project management.
3 lecture/2 laboratory hours

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.
3 lecture/2 laboratory hours

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.
3 lecture/2 laboratory hours

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.
3 lecture/2 laboratory hours

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.
3 lecture/2 laboratory hours

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.
3 lecture/2 laboratory hours

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.
180 work experience hours

IST 281 Information Systems Cooperative Education I 1 credit
IST 282 Information Systems Cooperative Education II 1 credit
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.
90 work experience hours

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.

GenEd Humanities
ITA 101 Beginning Italian I 3 credits
The first 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.
3 lecture hours
LAT — Latin

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.

LAT 101 Beginning Latin I 3 credits
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 is 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
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 is 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 101 with a minimum C grade
LAT 102 with a minimum C grade

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 a criminal prosecution are examined; legal interviewing, investigation, and an 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 the 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.
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 course on library and information services and resources, both in print and non-print format. Emphasizes research strategies to locate and access information for class discussions, projects, reports, term papers, and lifelong information needs. Topics include the online catalog, reference sources, Web-based and micro-formatted 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 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
Developmental 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 115, MAT 120, MAT 125, or MAT 140. [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

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. 3 lecture hours

LEG 143 Family Law 3 credits
Survey of procedures and pleadings in domestic relations including the preparation of divorce complaints, answers, counterclaims, motions, disclosure statements, and property settlement agreements. Includes issues of custody, visitation rights, child support and maintenance, adoptions and name changes. [Spring offering] 3 lecture hours

LEG 201 Commercial Law 3 credits
Prerequisite: BUS 107
Explores the basics of New Jersey collection practices and the major types of federal bankruptcy filings. 3 lecture hours

LEG 206 New Jersey Real Estate Transactions 3 credits
Examines the mechanics of real estate transactions in New Jersey, including deed and mortgage preparation, closing statements, R.E.S.P.A. forms, plus title policies and searches. [Fall offering] 3 lecture hours

LEG 208 Wills and Probate 3 credits
Survey of basic wills and basic probate practice, including interviewing for and preparation of a will, procedures involved in probate, New Jersey state inheritance tax, and federal estate tax. [Fall offering] 3 lecture hours

LEG 212 Field Experience – Paralegal 3 credits
Prerequisites: sophomore status and permission of instructor; eligibility generally limited to students in final semester prior to graduation
Students work in a New Jersey law office or other approved legal site, supervised by practicing attorneys and graded on ability to apply learning in practical situations. Includes seminar meeting one day per week.
1 lecture/210 work experience hours

LEG 232 Civil Litigation III 3 credits
Prerequisite: LEG 132 with a minimum C grade
Advanced litigation course stressing the preparation of a wide range of pleadings involved in a civil lawsuit. One-third of class time involves extensive practical litigation exercises and applications in a lab setting. 2 lecture/2 laboratory hours

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MAT 043 ▼ MAT 042 COURSES
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

MAT 116  Algebra and Trigonometry II  3 credits
Prerequisite: MAT 115 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

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-scientific/non-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

MAT 125  Elementary Statistics I  3 credits
Prerequisite: MAT 037 (or MAT 037A and 037B) or MAT 042 with a minimum C grade or appropriate placement test score
A basic introduction to statistical concepts and methods. Topics include descriptive statistics, basic probability concepts, discrete and normal probability distributions, hypothesis testing and confidence intervals with one sample mean and one sample proportion, as well as regression and correlation. Studies include the use of statistical software.  
3 lecture hours

MAT 126  Elementary Statistics II  3 credits
Prerequisite: MAT 125
Continuation of MAT 125. Topics include random sampling, experimental and observational studies, fundamentals of probability, confidence intervals and hypothesis testing on two populations and two proportions, F and Chi-Square distributions, analysis of variance, and basic nonparametric tests. Studies include the use of statistical software.  
3 lecture hours

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; radical expressions 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

MAT 140  Applied College Algebra  4 credits
Prerequisite: MAT 037 (or MAT 037A and 037B) or MAT 042 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

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

MAT 149  Calculus  4 credits
Prerequisite: MAT 146 with a minimum C grade or appropriate College Level Math placement test score
Application-based topics include the fundamental techniques of differentiation and integration of algebraic, trigonometric, exponential and logarithmic functions. Study focuses on optimization, maxima-minima and marginal analysis for differentiation and includes substitution method among other specific integration techniques. Not intended as a prerequisite for MAT 152.  
4 lecture hours

MAT 151  Calculus I for the Mathematical and Physical Sciences  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, optimization, maxima, minima, and approximations as well as integration and applications of the definite integral.  
4 lecture hours

MAT 152  Calculus II for the Mathematical and Physical Sciences  4 credits
Prerequisite: MAT 151 with a minimum C grade and consultation 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

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
Prerequisites: 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 non-parametric 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 Stokes' 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

MET 122  Industrial Measurements  3 credits
Prerequisites: completion of all developmental mathematics and English courses
Introduces measurement and dimensioning concepts used in industrial manufacturing environments. Topics include shop mathematics, shop safety practices, measuring devices, and a basic understanding of shop drawing techniques including geometric dimensioning and tolerancing (GD&T). Corresponding labs reinforce lectures with practical examples which follow NIMS certification requirements.  2 lecture/3 laboratory hours

MET 123  Machine Shop Techniques I  3 credits
Prerequisites: EET 140, MET 122
Introduces the theory and practical concepts of manual machining, primarily focused on using the lathe for turning operations to manufacture cylindrical part assemblies. Topics include shop mathematics, machine tool safety practices, measuring devices, and an understanding of lathe components. Corresponding labs apply practical hands-on examples which follow NIMS certification requirements.  2 lecture/3 laboratory hours

MET 124  Machine Shop Techniques II  3 credits
Prerequisite: MET 123
Introduces the theory and practical concepts of manual machining, primarily focused on using the vertical mill for milling operations to manufacture flat or angled part assemblies. Topics include shop mathematics, machine tool safety practices, measuring devices, and an understanding of vertical mill components. Corresponding labs reinforce lectures with practical hands-on examples which follow NIMS certification requirements.  2 lecture/3 laboratory hours

MET 231  Introduction to Computer Numerical Controlled (CNC) Machines  3 credits
Prerequisites: MET 123, MET 124
Introduces the theory and practical concepts of computer numerical controlled (CNC) machining equipment used in industry to manufacture extremely precise machine tool products. Topics include CNC equipment and terminology, G and M code familiarization, and machine tool safety practices. Corresponding labs reinforce lectures with practical hands-on examples which follow NIMS certification requirements.  2 lecture/3 laboratory hours

MET 232  Advanced Computer Numerical Controlled (CNC) Machines  3 credits
Prerequisite: MET 231
Investigates advanced theory and practical concepts of manual machining equipment used in industry to manufacture extremely precise machine tool products. Topics include CAD/CAM software (Mastercam) to produce complex machined parts. G and M code post- processing operations, and machine tool safety practices. Corresponding labs reinforce lectures with practical hands-on examples which follow NIMS certification requirements.  2 lecture/3 laboratory hours

MET 290  Advanced Manufacturing Technology Internship  2 credits
Prerequisite: coordinator approval
Introduces students to work experience in a manufacturing environment.  100 work experience hours

MKT — Marketing

MKT 101  Principles of Marketing  3 credits
Prerequisite: ENG 101 with a minimum C grade
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 with a minimum C grade
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

MKT 230  Principles of Retailing  3 credits

MUS 225  Music History and Literature II – Baroque Through Modern  3 credits
Prerequisites: MUS 103 and MUS 105 or equivalent experience
Continued study of the evolution of Western European music from the Baroque period to its development. Basic music theory background desirable.  3 lecture hours

MUS 225  Music History and Literature II – Baroque Through Modern  3 credits

MLT 112  Introduction to Medical Laboratory Technology  3 credits
Prerequisite: permission of program coordinator
Basic principles, techniques, and vocabulary applicable to medical laboratory technology. Topics include lab safety, specimen collection and transport, phlebotomy, urinalysis, immunology/serology, and computer technology as well as an overview of the four major laboratory disciplines of hematology/coagulation, immunohematology, chemistry, and microbiology. The laboratory component develops laboratory skills related to the lecture topics.  2 lecture/3 laboratory hours

MLT 112  Introduction to Medical Laboratory Technology  3 credits
Prerequisite: permission of program coordinator

MLT 200  Clinical Chemistry  4 credits
Prerequisite: permission of program coordinator
Basic principles, techniques, and vocabulary applicable to medical laboratory technology. Topics include lab safety, specimen collection and transport, phlebotomy, urinalysis, immunology/serology, and computer technology as well as an overview of the four major laboratory disciplines of hematology/coagulation, immunohematology, chemistry, and microbiology. The laboratory component develops laboratory skills related to the lecture topics.  2 lecture/3 laboratory hours

MLT 207  Clinical Immunohematology  4 credits
Prerequisite: permission of program coordinator
Basic theory and concepts of antigen-antibody reactions as they pertain to blood cell transfusions. Blood group antigens and the genetics of their inheritance are examined along with principles of immunology. Methods are introduced for performing blood grouping, compatibility testing, and component selection. The laboratory component develops technical skills through hands-on experience in blood bank procedures.  3 lecture/3 laboratory hours

MLT 207  Clinical Immunohematology  4 credits
Prerequisite: permission of program coordinator

MLT 212  Clinical Hematology  4 credits
Prerequisite: permission of program coordinator
Study of blood cells in bone marrow, peripheral blood, and body fluids. Normal and abnormal blood cell maturation, physiology, and morphology are examined along with coagulation, another branch of hematology, involving hemostasis (the stopping of blood flow). The laboratory component develops technical skills used to perform hematology and coagulation lab tests.  3 lecture/3 laboratory hours

MLT 212  Clinical Hematology  4 credits
Prerequisite: permission of program coordinator

MLT 214  Clinical Microbiology  6 credits
Prerequisite: permission of program coordinator
Principles and methods used in diagnostic microbiology. Test procedures routinely applied in medical bacteriology, parasitology, mycology, and virology are covered with an emphasis on the isolation, identification, and antimicrobial susceptibility testing of pathogenic microorganisms. Immunologic and molecular methods used for infection agent identification are also covered.  5 lecture/3 laboratory hours

MLT 214  Clinical Microbiology  6 credits
Prerequisite: permission of program coordinator

MLT 215  Clinical Practice  10 credits
Prerequisites: MLT 112, MLT 200, MLT 207, MLT 212, MLT 214, or permission of program coordinator
Clinical practice at an affiliated facility under the direction and supervision of laboratory educators. Students conduct routine analytical procedures, develop laboratory skills, apply knowledge of testing principles, and demonstrate acquired laboratory competencies. Includes presentation of a laboratory case study correlating test results with clinical condition.  560 clinical hours

MLT 215  Clinical Practice  10 credits
Prerequisites: MLT 112, MLT 200, MLT 207, MLT 212, MLT 214, or permission of program coordinator

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

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

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

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

MUS 224  Music History and Literature I – Antiquity Through Baroque  3 credits
Prerequisites: 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 224  Music History and Literature I – Antiquity Through Baroque  3 credits
Prerequisites: 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
Prerequisites: MUS 103 and MUS 105 or equivalent experience
Continued study of the evolution of Western European music from the Baroque period to its development. Basic music theory background desirable.  3 lecture hours

MUS 225  Music History and Literature II – Baroque Through Modern  3 credits
Prerequisites: MUS 103 and MUS 105 or equivalent experience
Continued study of the evolution of Western European music from the Baroque period to its development. Basic music theory background desirable.  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 167  
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. [Spring 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, rhythm 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  
Prerequisites: MUS 127, MUS 167  
Corequisite: MUS 128  
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 227 Music Theory III**  
3 credits  
Prerequisite: MUS 128  
Corequisite: MUS 267  
Study of chromatic harmony especially as used in modulation. Students recognize and compose harmonic progressions involving secondary dominants, diminished seventh chords, as well as altered and borrowed chords, correlated with exercises in ear training, sight-singing, and keyboard harmony. Also includes harmonic and formal analysis of 18th and 19th century repertoire. [Spring offering]  
2 lecture/2 laboratory hours

**MUS 227 Musicianship III**  
1 credit  
Prerequisites: MUS 128, MUS 168  
Corequisite: MUS 227  
Further studies in sight singing, ear training, and keyboard harmony building upon skills acquired in MUS 167 and MUS 168. Introduces chromatic materials including modulation to the dominant and to the relative major and minor. Coordinated with conceptual materials presented in MUS 227.  
2 laboratory 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**  
Prerequisite: MUS 121  
Continuation of the playing skills and activities initiated in MUS 121.  
2 laboratory hours

**MUS 221 Piano Class III**  
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

**MUS 222 Piano Class IV**  
Prerequisite: MUS 221  
Continuation of MUS 221.  
2 laboratory hours

## Guitar Class

**MUS 142 Guitar Class I**  
1 credit  
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 lecture/1 laboratory hour

## College Chorus

**MUS 101 Chorus I**  
2 credits

**MUS 102 Chorus II**  
2 credits

**MUS 201 Chorus III**  
2 credits

**MUS 202 Chorus IV**  
2 credits

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.  
3 class hours

## Chamber Ensemble

**MUS 111 Chamber Ensemble I**  
2 credits

**MUS 112 Chamber Ensemble II**  
2 credits

**MUS 211 Chamber Ensemble III**  
2 credits

**MUS 212 Chamber Ensemble IV**  
2 credits

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.  
3 class hours

## Orchestra

**MUS 117 Orchestra I**  
2 credits

**MUS 118 Orchestra II**  
2 credits

**MUS 217 Orchestra III**  
2 credits

**MUS 218 Orchestra IV**  
2 credits

Prerequisite: prior orchestral instrument playing experience  
Opportunity to explore, through rehearsal and performance, orchestral repertoire from a variety of historical periods. The student is trained in proper phrasing, articulation, and dynamics as well as learning how to play within a large group. Course culminates in a final public concert performance.  
1 lecture/2 laboratory hours
COURSES

Jazz Studies

MUS 119 Jazz Band I 2 credits
Prerequisites: ability to play a jazz band instrument and to read music notation

MUS 120 Jazz Band II 2 credits

MUS 219 Jazz Band III 2 credits
Prerequisite: MUS 120 with a minimum C grade

MUS 220 Jazz Band IV 2 credits
Prerequisite: MUS 219 with a minimum C grade
Opportunity to explore classic jazz literature through rehearsal and performance. Repertoire is selected from standards of the swing era, to be-bop, to contemporary funk and fusion with an emphasis on proper articulation, groove, and dynamics specific to each style.

MUS 151 Jazz Improvisation I – Blues 2 credits
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.

MUS 152 Jazz Improvisation II – Modal 2 credits
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 Latino idioms and rhythms.

MUS 223 Jazz Keyboard Harmony and Improvisation 1 credit
Prerequisite: MUS 221
Introductory course presenting the fundamentals of jazz harmony, chord progressions, scales, and tools for improvisation at the keyboard.

Music Production and Business

MUS 123 Music Business 3 credits
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.

MUS 235 Music Composition in the Virtual Studio 3 credits
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 “popular” and “art” music.

Advanced Studies

MUS 285 Special Studies in Instrumental Music 3 credits

MUS 286 Special Studies in Choral/Vocal Music 3 credits
Prerequisites: MUS 128 and MUS 204

NET — Networking Technology

NET 102 Introduction to PC Hardware and Software 3 credits
Students learn to install, configure, diagnose, and troubleshooting microcomputer hardware components and various operating systems. Includes an introduction to local area networks, the identification and installation of memory, preventative maintenance, plus coverage of terminology and concepts that will assist students preparing for the A+ Certification exams.

NET 103 IT Essentials 3 credits
Prerequisite: basic computer literacy
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.

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, modern implementation, LAN troubleshooting and support resources, fault tolerance, network adapters, and client-server environments. Assists students preparing for the Network+ Certification exam.
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 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 130 Routing and Switching Essentials 3 credits

Prerequisite: 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 120 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 Scaling Networks 3 credits

Prerequisite: NET 130

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 Connecting Networks 3 credits

Prerequisite: NET 130

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, DDR, 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 current risks and threats combined with structured safeguarding of an organization’s critical electronic assets. Provides a foundation for those new to information security as well as those responsible for protecting network services, devices, traffic, and data. Broad-based, in-depth coverage prepares students for further study in other specialized security fields. Hands-on activities reinforce certification exam objectives.

2 lecture/2 laboratory hours
NET 245  Ethical Hacking  3 credits  
**Prerequisites:** NET 102, NET 104  
Combines an ethical hacking methodology with the hands-on application of security tools to better help students secure their systems. Students are introduced to common countermeasures that effectively reduce and/or mitigate attacks, including penetration testing, reconnaissance/open source intelligence gathering, scanning, enumeration, exploitation, and post-exploitation. Hands-on activities reinforce 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

**NSG — 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

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. Explores concepts of groups. Provides experiences in a variety of mental health settings.  
30 lecture/60 clinical hours

NSG 136  LPN Transition: Nursing Through the Life Span  9 credits  
**Corequisites:** BIO 103, BIO 104, ENG 101, PSY 101, PSY 207, NSG 137, NUR 151  
Designed to assist in the transition from licensed practical nurse to registered nurse. Building on previous learning while introducing new knowledge and skills that pertain to the registered nurse role, prepares for the final two nursing courses in the curriculum. Emphasizes use of the nursing process in meeting the self-care deficits of clients and families through the life span.  
5 lecture/180 clinical hours

NSG 137  Physical Assessment  3 credits  
**Prerequisite:** formal admission into the Nursing program  
Provides the knowledge and skills necessary to perform a comprehensive adult health assessment. Through discussion as well as 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 lecture/2 laboratory hours

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. Explores complex client problems, resulting in alteration of homeostatic mechanisms. Expands leadership and management skills. Clinical learning experiences are provided in a variety of settings including critical care areas.  
6 lecture/180 clinical hours
**COURSES**

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. Further explores the concept of leadership and management. Offers learning experiences in a variety of settings including pediatric facilities.  
5 lecture/180 clinical hours

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**OHT — Ornamental Horticulture**

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**GENED Science**

OHT 101  Plant Science  3 credits  
Introduction to the field of plant science. Topics include basic botany and plant physiology; plant growth; leaves, roots, fruits, stems, and flowers; cells; plant reproduction; genetics; and the plant kingdoms. [Fall offering]  
2 lecture/2 laboratory hours

OHT 102  Ornamental Horticulture  3 credits  
Examines plant propagation, plant pests, landscape establishment and maintenance, greenhouse management, principles of landscape design, and fruit and vegetable production. [May be taken independently of OHT 101.] [Spring offering]  
2 lecture/2 laboratory hours

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OHT 108  Soil and Plant Nutrition  4 credits  
*Prerequisite: CHE 100 or equivalent with a minimum C grade or permission of program coordinator*

Explores the origins, composition, and properties of soils. Addresses physical and chemical properties including ion exchange and pH effects, soil organic matter, soil-water relationships, the nature of and reasons for soil nutrient deficiencies, composition, and the use of fertilizers and other soil adjuvants. Lab work involves representative New Jersey soils to illustrate basic soil behavior. [Spring offering]  
3 lecture/3 laboratory hours

OHT 121  Herbaceous Plants  3 credits  
*Prerequisite: BIO 101 or OHT 101 with a minimum C grade or permission of program coordinator*

Study of cultivated, ornamental herbaceous plant species including annuals, perennials, bulbs, herbs, and grasses. Emphasizes identification, use, color, height, and season of bloom. Special topics include planning a herbaceous garden, insect pests, diseases, and propagation. [Fall offering]  
2 lecture/2 laboratory hours

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OHT 201  Basic Landscaping and Planning I  3 credits  
Principles and technology of landscape design. Covers the practical and aesthetic aspects of planning the residential landscape, involving both materials and methods. Emphasizes design and graphics skills. [Fall offering]  
2 lecture/3 laboratory hours

OHT 202  Basic Landscaping and Planning II  3 credits  
*Prerequisite: OHT 201 with a minimum C grade*

Continuation of OHT 201. Emphasizes practical projects for residential areas and public common spaces. [Spring offering]  
2 lecture/3 laboratory hours

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**OHT — Nursing**

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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. 3 lecture hours

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OHT 204  Plant Diseases  3 credits  
*Prerequisite: OHT 101 or permission of program coordinator*

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

OHT 207  Floral Design I  3 credits  
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

OHT 208  Floral Design II  2 credits  
*Prerequisite: OHT 207 or permission of program coordinator*

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

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OHT 212  Landscape Construction  3 credits  
*Prerequisite: OHT 102 or permission of program coordinator*

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

OHT 219  Plant Propagation  3 credits  
*Prerequisite: OHT 101 or permission of program coordinator*

Principles and techniques involved in the selection, propagation, and growth of garden flowers, greenhouse crops, woody plants, turfgrass, and plants for interior landscape. [Fall offering]  
2 lecture/2 laboratory hours

OHT 223  Topics in Horticulture: Gardening  1 credit  
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

OHT 224  Topics in Horticulture: Landscaping  1 credit  
*Prerequisite: OHT 201*

Application of computer programs to enhance design presentation skills. [Occasional offering]  
2 laboratory hours

OHT 226  Interior Landscape Design  3 credits  
*Prerequisite: OHT 101 or OHT 102 or permission of program coordinator*

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

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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]  
175 work experience hours

OHT 292  Ornamental Horticulture Cooperative Education II  1 credit  
Prerequisite: OHT 291
Continuation of OHT 291. [Spring, Summer, Fall offering]  
85 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 111  Computer Keyboarding with Word Processing Applications  3 credits  
Develops basic keyboarding skills. Students learn the keyboard and basics of word processing including proper formatting 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 112  Advanced Keyboarding Applications  3 credits  
Prerequisite: OST 111 with a minimum C grade
Advanced keyboarding applications including various letter styles and notations, comprehensive reports and tables, and business statements and forms. Skill goal is 45 to 58 words per minute for five minutes with five or fewer errors. Proofreading and editing skills are also addressed.  
2 lecture/2 laboratory hours

OST 219  Word Processing Concepts and Applications  3 credits  
Prerequisite: OST 111 with a minimum C grade or equivalent keyboarding proficiency
Students develop proficiency in a wide range of word processing functions using Microsoft Word software. Covers generic concepts pertinent to all word processing software, as well as correct document formatting.  
2 lecture/2 laboratory hours

OST 222  Current Topics in Office Administration  3 credits  
Prerequisites: sophomore standing and proficiency in office applications
Comprehensive coverage of all facets of administrative assistant responsibilities, including travel and conference planning, time and stress management, handling incoming and outgoing communications, e-mail and Internet proficiency, and international protocol. Additionally focuses on professional image building and career advancement.  
2 lecture/2 laboratory 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 macros, adding borders, inserting clipart, drawing shapes, executing word art and equation editor, applying columns, styles, fill-in forms and desktop publishing applications. Cloud and cloud-based applications explored.  
2 lecture/2 laboratory hours
PBH — Public Health

PBH 101 Principles of Public Health 3 credits
Prerequisite: placement in college-level English
A broad overview of public health including historical, perspectives, communicable disease, epidemiology, health policy, environmental health, emergency preparedness, as well as social, cultural, and behavioral aspects of health across the life Span. Additional topics present an introduction to public health infrastructure, delivery of local, state and national services, and core competencies for public health professionals. 3 lecture 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 112 Critical Thinking 3 credits
Theory and practice of critical thinking through examples drawn from science, business, politics, media, literature, and art. Students apply logical techniques and attitudes of analysis and communication for constructive assessment, ethical reasoning, and creative problem-solving by evaluating definitions, facts, arguments, causes, rhetoric, differences, and plans while avoiding common errors and biases. 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
Prerequisite: ENG 101
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
Prerequisite: ENG 101
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. Stress 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

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 Black & White Film Photography I 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 Black & White Film Photography II 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 Digital Photography I 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
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 II 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 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

PHY — Physics

Phy 101  College Physics I  4 credits  
Corequisite: 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  
with a minimum C grade or approved equivalent  
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  
broader range of topics in the fields of chemistry, physics, and  
astronomy such as measurement, motion, forces (gravitational-  
al, 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 inten-  
tended 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 121  The Universe  3 credits  
Prerequisite: MAT 135  
Introduces students to the world beyond Earth with a survey of  
modern astrophysics. Study encompasses three dominant sections: stellar astronomy, planets and life, and galaxies and cosmology. Laboratory data analysis requires algebra. Offered at off-site locations only.  
2 lecture/2 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 inten- 
tended 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

Phy 293  Honors Research in Physics I  2 credits  
Prerequisites: PHY 101 or PHY 115; divisional permission  
The third course in a calculus-based physics sequence inten- 
tended for students majoring in physics, engineering science,  
computer science, mathematics, and other technical areas. Topics include thermodynamics, gases, optics, as well as modern physics. The laws of physics are investigated and applied to problem solving.  
3 lecture/3 laboratory hours

Phy 296 Honors Research in Physics IV  2 credits  
Prerequisites: PHY 295 Honors Research in Physics III  
Topics include thermodynamics, gases, optics, as well as  
computer science, mathematics, and other technical areas.  
tended for students majoring in physics, engineering science,  
The third course in a calculus-based physics sequence in-  
tended for students majoring in physics, engineering science,  
computer science, mathematics, and other technical areas. Topics include thermodynamics, gases, optics, as well as modern physics. The laws of physics are investigated and applied to problem solving.  
3 lecture/3 laboratory hours

Phy 295 Honors Research in Physics III  2 credits  
Prerequisites: PHY 293 Honors Research in Physics I  
Under the guidance of an area sponsor in an industrial or  
academic environment, students participate in a physics re-  
search project. Requires a written report and oral presentation  
to students and faculty at the conclusion of the project period.  
[May be applied toward fulfilling Science elective re-  
quirements in the Physics program or other program upon  
program coordinator’s approval.]  
3 laboratory hours per week

POL — Political Science

Pol 101  The American Political System  3 credits  
Introduction to the basic structures of the United States na-  
tional government and political processes with a view toward  
helping the student better understand current issues and pol-  
licies. 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  
groups, parties and candidates. Examination of current  
events and trends in modern politics further enhances aware-  
ness 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 va-  
riety of theoretical perspectives that allow students to bet-  
ter understand and analyze current and past international  
behavior. Concepts include balance of power, economic in-  
teraction, diplomacy, the role of international organizations,  
leadership styles, and public policymaking in the internation-  
al context.  
3 lecture hours
PSY — Psychology

PSY 101  Introduction to Psychology 3 credits
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
Studies 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 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 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 211  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 220  The Psychology of Women 3 credits
Prerequisite: PSY 101 with a minimum C grade
Exploration of the psychological, biological, and cultural factors influencing the lives of women. Critical analysis of differences and similarities between men and women, gender roles, and the effect of gender on contemporary issues in psychology including physical and emotional health, academic and occupational achievement, relationships, sexual intimacy, violence, and aging. 3 lecture hours

PSY 225  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 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
completed within the past five years
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

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### COURSES

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTA 107</td>
<td>Therapeutic Measurement</td>
<td>2 credits</td>
<td>BIO 104 with a minimum C+ grade completed within the past five years; PTA 101</td>
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<td>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.</td>
<td>1 lecture/2 laboratory hours</td>
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<td>PTA 112</td>
<td>Pathology for PTAs</td>
<td>3 credits</td>
<td>BIO 104 with a minimum C+ grade completed within the past five years: ENG 102</td>
<td>Required for Physical Therapist Assistant majors. Covers the essential nature of diseases and abnormalities of structure and function characteristic of diseases.</td>
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<tr>
<td>PTA 201</td>
<td>Therapeutic Exercise</td>
<td>2 credits</td>
<td>PTA 105, PTA 107</td>
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<td>Review and discussion of treatment interventions that correlate with patient therapy goals. Topics include interpreting a physical therapy initial evaluation, range of motion exercises, stretching, strengthening, joint mobilization, aerobic exercise, exercise parameters and exercise progression. Emphasizes activities to promote clinical decision-making using patient scenarios.</td>
<td>3 lecture hours</td>
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<tr>
<td>PTA 205</td>
<td>Motor Development</td>
<td>1 credit</td>
<td>PTA 101, PTA 105, PTA 112</td>
<td>PTA 213</td>
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<td></td>
<td>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.</td>
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<tr>
<td>PTA 210</td>
<td>PTA Techniques</td>
<td>4 credits</td>
<td>PTA 107, PTA 112</td>
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<td>Addresses patient care and handling, including patient positioning and bed mobility, vital signs, transfers, gait, massage, aseptic techniques, wound care, edema management, and cardiac and chest physical therapy. Students develop their skills through practice with each other. Competencies evaluated throughout the course.</td>
<td>3 lecture/2 laboratory hours</td>
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<tr>
<td>PTA 211</td>
<td>Physical Agents</td>
<td>4 credits</td>
<td>PTA 107 and PTA 112</td>
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<td>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.</td>
<td>3 lecture/3 laboratory hours</td>
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<tr>
<td>PTA 213</td>
<td>PTA Therapy Clinic</td>
<td>3 credits</td>
<td>PTA 210, PTA 211</td>
<td>PTA 205</td>
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<tr>
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<td>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.</td>
<td>3 lecture/3 laboratory hours</td>
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<tr>
<td>PTA 216</td>
<td>Orthopedics in PTA</td>
<td>2 credits</td>
<td>PTA 107, PTA 112, PTA 210</td>
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<td></td>
<td>A study of orthopedic conditions and their underlying pathology. Emphasis on physical therapy interventions utilized in the rehabilitation of specified conditions.</td>
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<tr>
<td>PTA 224</td>
<td>PTA Clinical Education I</td>
<td>3 credits</td>
<td>PTA 107, PTA 112</td>
<td>PTA 226</td>
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<td>Prerequisites: PTA 107</td>
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<td>Corequisite: PTA 226</td>
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<td></td>
<td>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).</td>
<td>40 hours per week for 4 weeks = 160 clinical hours</td>
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<tr>
<td>PTA 226</td>
<td>PTA Seminar I</td>
<td>2 credits</td>
<td>PTA 107, PTA 112</td>
<td>PTA 224</td>
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<td>Prerequisites: PTA 107</td>
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<td>Corequisite: PTA 224</td>
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<td></td>
<td>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.</td>
<td>3 lecture hours</td>
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<tr>
<td>PTA 235</td>
<td>PTA Clinical Education II</td>
<td>4 credits</td>
<td>PTA 210, PTA 211, PTA 224, PTA 226</td>
<td>PTA 236</td>
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<td>Prerequisites: PTA 210</td>
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<td>Corequisite: PTA 236</td>
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<td>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.</td>
<td>40 hours per week for 5 weeks = 200 clinical hours</td>
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<tr>
<td>PTA 236</td>
<td>PTA Seminar II</td>
<td>2 credits</td>
<td>PTA 226</td>
<td>PTA 235</td>
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<td>Prerequisite: PTA 226</td>
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<td>Corequisite: PTA 235</td>
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<td>Continues the case study concept 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.</td>
<td>3 lecture hours</td>
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<tr>
<td>PTA 240</td>
<td>PTA Clinical Education III</td>
<td>5 credits</td>
<td>PTA 213, PTA 235</td>
<td>PTA 241</td>
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<td>Prerequisites: PTA 213, PTA 235</td>
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<td>Corequisite: PTA 241</td>
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<td>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.</td>
<td>40 hours per week for 6 weeks = 240 clinical hours</td>
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<tr>
<td>PTA 241</td>
<td>PTA Seminar III</td>
<td>1 credit</td>
<td>PTA 236</td>
<td>PTA 240</td>
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<td>Prerequisite: PTA 236</td>
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<td>Corequisite: PTA 240</td>
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<td>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.</td>
<td>1 lecture hour</td>
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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

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: MAT 037 (or MAT 037A and 037B), ENG 024, ENG 034
Corequisites: RAD 107, RAD 119, BIO 103, MAT elective
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 in 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
Corequisites: 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 sociocultural representations of gender; representations of gender; economic, social, and political implications of gender constructs; and cross-cultural perspectives on gender. 3 lecture hours

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 open to students who received a C- or better in 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 content. 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 open to students who have passed 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 an authentic language context. Reading, writing, and grammar study are assigned out of class to facilitate effective listening and speaking practice in class. 3 lecture hours
SPA 101 Hispanic Culture 3 credits
A survey course that explores the culture, nation, language, geography, and power within a region or regions of the Spanish-speaking world; topic to be determined by instructor based on expertise or, in the case of study abroad, based on the country or region of travel. Concepts are treated synchronically, diachronically, and politically. Taught in English; does not fulfill foreign language requirement.

SPA 110 Hispanic Culture 3 credits
A survey course that explores the culture, nation, language, geography, and power within a region or regions of the Spanish-speaking world; topic to be determined by instructor based on expertise or, in the case of study abroad, based on the country or region of travel. Concepts are treated synchronically, diachronically, and politically. Taught in English; does not fulfill foreign language requirement.

SPA 121 Spanish for Health Providers I 3 credits
The first in a sequence of courses designed for healthcare students and professionals with little or no prior knowledge of Spanish. Spoken communication in Spanish is both the end goal and the means of instruction. Emphasizes listening, speaking, reading, and writing Spanish within the context of providing healthcare, medicine, and well-being. Reading and writing are assigned out of class to facilitate effective listening and speaking practice in class. Basic grammar is also introduced.

SPA 122 Spanish for Health Providers II 3 credits
Prerequisite: SPA 101 or SPA 121
The second in a sequence of courses designed for healthcare students and professionals with little or no prior knowledge of Spanish. Spoken communication in Spanish continues as both the end goal and the means of instruction. Builds on listening, speaking, reading, and writing Spanish within the context of providing healthcare, medicine, and well-being. Reading and writing are assigned out of class to facilitate effective listening and speaking practice in class. Basic grammar is also introduced.

SPA 150 Intermediate Spanish I 3 credits
Prerequisite: SPA 102 with a minimum C grade, placement by exam, or permission of instructor
The first third (five weeks) of the semester is dedicated to a review of beginner-level grammar and vocabulary. The class then transitions to short readings and guided discussions which apply the reviewed language to topics of Hispanic culture, politics, and history. Spanish communication is the means and end goal of instruction.

SPA 151 Intermediate Spanish I 3 credits
Prerequisite: SPA 151 with a minimum C- grade, placement by exam, or permission of instructor
Continuation of SPA 151. 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.

SPA 152 Intermediate Spanish II 3 credits
Prerequisite: SPA 152 or permission of instructor
Continuation of SPA 151. 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.

SPA 251 Advanced Spanish I 3 credits
Prerequisite: SPA 152 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.

SPA 252 Advanced Spanish II 3 credits
Prerequisite: SPA 152 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.

SST — Security Systems Technology
SST 200 Physical Security Product Technologies 3 credits
Prerequisites: NET 103 and NET 104 or equivalent experience
Addresses the operation and integration of physical security products and technologies including IP-based video surveillance equipment, analytics software, and physical security information management (PSIM), how to satisfy the needs of end user customers by reducing operating costs, and how these technologies keep assets safe around the world.

SST 210 Security Project Management 3 credits
Prerequisite: SST 200
Examines the role of the security project manager, including the concepts and tools of professional project management. Topics include managing costs, assuring quality, and controlling all aspects of projects throughout the lifecycle, plus fundamental factors affecting a given project, such as stakeholder influence, cash flow, and risk management.

SST 220 Systems Integration: A Business Blueprint 3 credits
Prerequisite: SST 200
Students learn to build a security solution which combines equipment, engineering and service, analyze the attributes of products and services, assess customer needs, align organizational strategy to leverage the most powerful features and strengths of products and services, and create a system to meet a client need or solve a client problem.

SST 230 Security Sales: The Consultative Approach 3 credits
Prerequisite: SST 200
An introduction to the sales process, focusing on security solutions. Students learn how to organize the sales effort; assess customer needs and present security solutions; organize constituencies to develop, design, and implement security systems solutions; assess return on security investment; manage the customer experience; and maintain consultative, profitable customer relationships.

STA — Study Abroad
STA 101 Study Abroad Seminar 1 credit
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.
SUS — Sustainability

SUS 101  Introduction to Sustainability  3 credits
Prerequisites: ENG 024, ENG 034
Examination of the fundamental concepts and principles supporting long-term preservation and availability of natural resources and ecological balance. Factors of sustainability explored include global population growth and consumption, climate change, energy, ecosystems, and community design.

3 lecture hours

SWK — Social Work

SWK 110  Introduction to Human Services  3 credits
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.

3 lecture/45 practicum hours

THR — Theatre

THR 101  Introduction to Theatre  3 credits
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 theatre production practices – historical as well as current – and dramatic theory. Requires attending current theatre productions. [Fall and Spring offering]

3 lecture hours

THR 102  Stagecraft  3 credits
Introduction to the skills and practice of technical theatre. Studies include elementary carpentry and set construction, scene painting, shop procedures, lighting, cost efficiency, and safety. Students work on college theatre productions. [Fall and Spring offering]

2 lecture/2 laboratory hours

THR 104  Fundamentals of Acting  3 credits
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]

2 lecture/2 laboratory hours

THR 105  Acting II: Principles of Characterization  3 credits
Prerequisite: THR 104
Continuation of the skills developed in THR 104. Focuses on the actor's movement and voice skills to support character work. Students utilize Michael Chekhov's Acting Technique, mask work, and improvisation to broaden basic acting skills. Attendance at dance, chorus, and theatre productions is required. [Spring offering]

2 lecture/2 studio hours

THR 107  Dramatic Writing for Stage and Screen  3 credits
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.

2 lecture/2 laboratory hours

THR 150  Scenic Techniques for the Entertainment Industry  3 credits
Prerequisites: ETT 102, THR 102 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 folie, 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]

2 lecture/2 laboratory hours

THR 152  Lighting Technology  3 credits
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. [Fall and Spring offering]

2 lecture/2 laboratory hours

THR 207  Scene Study I  3 credits
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.

3 lecture hours

THR 210  Theatre History: Classical to Elizabethan  3 credits
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]

3 lecture hours

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 dramaticity 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

THR 252  Lighting Design  3 credits
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.

2 lecture/2 laboratory hours
### UAS — Unmanned Aerial Systems

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<tr>
<td>UAS 101</td>
<td>Introduction to Unmanned Aerial Systems</td>
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<tr>
<td>UAS 102</td>
<td>Advanced Unmanned Aerial Systems</td>
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### VPA — Visual and Performing Arts

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<td>VPA 228</td>
<td>Artistic Collaboration Workshop</td>
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### WGS — Women’s and Gender Studies

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<tr>
<td>WGS 132</td>
<td>Introduction to Women’s and Gender Studies</td>
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<td>Corequisite: ENG 101 or college-level eligibility</td>
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<td>WGS 221</td>
<td>Seminar in Women’s and Gender Studies</td>
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<td>Prerequisites: ENG 102 with a minimum C grade; 9 credits of electives as listed in the Women’s and Gender Studies guidelines</td>
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**UAS 101 Introduction to Unmanned Aerial Systems (UAS) 3 credits**
An overview of unmanned aerial systems (UAS), emphasizing their commercial and military history and growth as well as current and future applications in today's world. In addition, students are trained on the basics of flying a UAS and obtain the necessary ground training to take the required FAA written test for Remote Pilot - UAS. Proof of U.S. citizenship is required.

**UAS 102 Advanced Unmanned Aerial Systems (UAS) 3 credits**
Corequisite: UAS 101
An in-depth study of unmanned aerial systems (UAS), emphasizing current and future applications including commercial and military. Current Federal Aviation Regulations as they apply to commercial UAS operations are explored, as are UAS design, human factors relating to operation, and the general public’s perceptions of UAS operation. Students continue to develop safety skills as well as more advanced UAS flying maneuvers. Proof of U.S. citizenship is required.

**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]

**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.

**WGS 221 Seminar in Women’s and Gender Studies 3 credits**
Prerequisites: ENG 102 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.