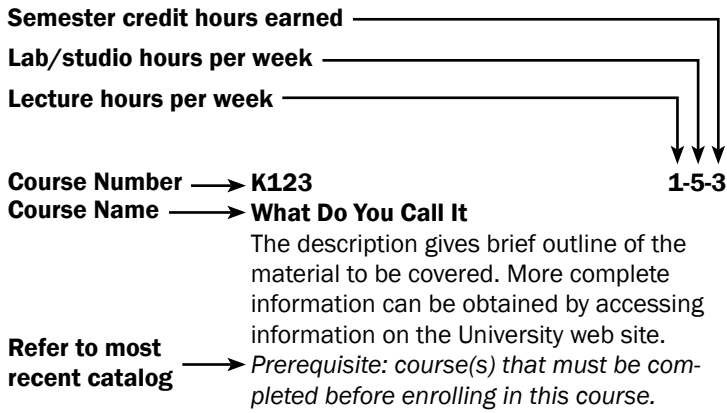


Course Descriptions

This letter/number system is used to designate the colleges and the disciplines and subjects offered within these colleges.

Key to Course Description Information

Before registering for a course, students must satisfy prerequisites as indicated in the following course descriptions. When changes are made, students are to follow the requirements in the most recent catalog.



Course Prefix

ACCT	Accounting
ADFND	Architecture Design Foundation
AHIST	History of Architecture & Interiors
ANIM	Animation
ARAB	Arabic
ARCH	Architecture
ARCHDSN	Architecture Design
ARCST	Architectural Studies
AREAST	Area Studies
ARTH	Art History
ARTS	Arts and Culture
BEHLT	Behavior Health
BIOL	Biology
BLAW	Business Law
BUS	Business
CAD	Computer-Aided Design
CHEM	Chemistry
CHINE	Chinese
CMGT	Construction Management
CMPR	Computing
CMW	Certificate Midwifery (GR)
COLLST	College Studies
COMM	Communications
CSSEM	Continuing Studies Seminar
DEC	Design, Engineering and Commerce
DIGD	Interactive Design & Media
DMM	Disaster Medicine Management (GR)
DRAW	Drawing
DSGNFND	Design Foundations
ECBIO	Environmental Science
ECON	Economics
EMS	Emergency Services
EMT	Emergency Medical Technician
ENGR	Engineering
FAS	Fashion Apparel Studies (GR)
FASHDES	Fashion Design
FASHDRW	Fashion Drawing
FASHMGT	Fashion Management
FIM	Fashion Industry Management
FINC	Finance
FREN	French
GER	German
GRAPH	Graphic Design Communication
HIST	Historical Understanding
HLTSV	Health Services
HSCI	Health Sciences
HONOR	Honors Program
HRM	Human Resources
HUMN	Humanities
HUMSV	Human Services
IDD	Interactive Digital Design (GR)
IDF	Instructional Design Foundation (GR)

IDT	Instructional Design Technology (GR)
IENGR	Industrial and Systems Engineering
INDD	Industrial Design
INFO	Information Systems
INTD	Interior Design
IT	Information Technology
ITAL	Italian
JAPN	Japanese
JSINT	Junior Seminar: Integrative Professional Seminar
JSLA	Junior Seminar: Liberal Arts Seminar
KNIT	Knitting
LANG	Language
LARCH	Landscape Architecture
LAW	Law
LAWEN	Law Enforcement
MATH	Mathematics
MBA	Business Administration (GR)
MBB	MBA Pilot Bridge Program
MBF	Business Foundation (GR)
MBT	Textile Business (GR)
MCM	Construction Management (GR)
MENGR	Mechanical Engineering
MGMT	Management
MIS	Information Systems
MKTG	Marketing
MMW	Midwifery (GR)
MSID	Industrial Design (GR)
OCC	Occupational Therapy (GR)
OTA	Occupational Therapy Assistant (CPS)
PAS	Health Sciences/Physician Assistant Studies
PASF	Physician Assistant Studies Foundation
PE	Physical Education
PHOTO	Photography
PHYS	Physics
PRINT	Print Design
PSYCH	Psychology
PUBH	Public Health
READ	Reading
SCI	Science
SDN	Sustainable Design (GR)
SERVE	Civic Engagement
SOC	Social Sciences
SPAN	Spanish
STAT	Statistics
STUAB	Study Abroad
SUST	Sustainability
TAX	Taxation (GR)
TENGR	Textile Engineering
TES	Textile Engineering and Science (GR)
TEXT	Textile
TEXTCHM	Textile Chemistry
TXD	Textile Design (GR)
TXF	Textile Foundation (GR)
VSDDES	Visual Studies: Design
VSDRW	Visual Studies: Drawing
WEAV	Weaving
WRTG	Writing

Course Descriptions

ACCT-101 (Formerly B403) 3-0-3 **Financial Accounting**

Designed to introduce all business students to the field of accounting, the course covers the fundamental principles of accounting, highlighting balance sheet and income statement presentation. Primary emphasis on accounting as a source of financial information, with procedural details kept to a minimum.

ACCT-102 (Formerly B423) 3-0-3 **Managerial Accounting**

Objective analysis and interpretation of accounting information. Use of accounting information as a basis for planning, control and managerial decisions.

Prerequisite: ACCT-101 (required for all business students)

ACCT-203 (Formerly B441) 3-0-3 **Intermediate Accounting I**

An in-depth study of basic accounting principles and theory followed by a detailed analysis of cash, receivables and investments (including the related revenue and expense transactions). Text supplemented with the current rulings of the AICPA.

Prerequisite: ACCT-101

ACCT-204 (Formerly B442) 3-0-3 **Intermediate Accounting II**

Continues the analysis of a company's balance sheet with a study of inventories, fixed assets and liabilities. Text supplemented by current rulings of the AICPA.

Prerequisite: ACCT-203

ACCT-303 (Formerly B443) 3-0-3 **Accounting Theory and Practice**

This course will enable students to study topics such as corporate entities, cash flow statements, pensions and leases; along with other material not covered in previous accounting courses.

Prerequisite: ACCT-204

ACCT-309 (Formerly B463) 3-0-3 **Federal Taxes I**

This course examines the federal tax laws as related to individual income taxation. The textbook is supplemented by using the actual 1040 tax forms and the related supporting schedules. The course is open to all students.

Prerequisite: ACCT-101

ACCT-316 (Formerly B461) 3-0-3 **Cost Accounting I**

This course includes study of job order, process and standard cost systems; cost-volume-profit analysis; absorption versus direct costing; inventory-control systems, including EOQ and JIT systems concepts; relevant costing in decision making; time value of money concepts; and capital-budgeting theory and application.

Prerequisite: ACCT-203

ACCT-325 (Formerly B466) 3-0-3**Business Taxes-State and Federal**

An in-depth coverage of business taxes. Emphasis is placed on partnership, corporation and sub-corporations. Pennsylvania, New Jersey and Delaware tax laws will be examined.

Prerequisite: ACCT-309

ACCT-381 (Formerly B499) 0-0-3**Independent Study in Accounting**

Intensive independent study of a chosen subject. The student is expected to read a substantial number of major works in the field and to prepare a critical documented paper. See also the statement on Independent Study under "Academic Policies."

Prerequisites: permission required, see appropriate form on-line on the University Registrar's web page www.philau.edu/registrar/ for more information.

ACCT-409 (Formerly B464) 3-0-3**Auditing**

Principles, standards and procedures of auditing. Emphasis upon the public accounting profession, its current pronouncements, practices and problems.

Prerequisite: ACCT-204

ACCT-412 (Formerly B465) 3-0-3**Advanced Accounting**

This course includes study of business combinations and consolidated financial-statement preparation, foreign subsidiary operations, foreign transactions and government and not-for-profit industry accounting. The text is supplemented with current rulings of the AICPA.

Prerequisite: ACCT-303

ADFND-101 (Formerly A111) 0-8-4**Design 1: Interdisciplinary Foundation Studies**

This basic foundation course is required in the Architecture, Interior Design and Landscape Architecture curricula. It is an introduction to fundamental design principles and vocabulary, process methodologies and problem-solving strategies. Lectures and demonstrations will stress abstraction as a primary building block for future design studios.

ADFND-102 (Formerly A112) 0-8-4**Design 2: Architecture Foundation Studies**

This basic foundation course is required in the Architecture and Historic Preservation and Visual Studies curricula. It is a synthesis of fundamental design principles and an introduction to research as a tool for understanding programming and design. Lectures and demonstrations will utilize the case-study methodology to investigate various design strategies and to chart the historical course of modernism.

Prerequisite: grade of "C" or better in ADFND-101

ADFND-104 (Formerly A122) 1-5-3**Drawing II for Architecture**

This is a drawing elective option. Drawing skills will be developed through rapid exploratory sketches and through complex three-dimensional studies that explore volumes/voids and light/shade with special references to architectural

details and furniture. Investigation of space/form relationships through one- and two-point perspectives and through various drawing materials will be introduced.

Prerequisite: DRAW-101

ADFND-110 (Formerly A124) 1-5-3**Painting from Perception**

Building on the foundation of the introductory drawing course, this elective course allows students to work from perception as they learn painting skills using acrylic and other water-based media. The course explores issues of composition with color and develops the student's sensibility toward the use of color. Subject matter includes still life, portraiture, figure, interiors and landscape.

Prerequisites: DRAW-101, and ADFND-101 or DSGNFND-103

ADFND-112 (Formerly A125) 1-4-3**Techniques of Communication**

The designed object is tangible, but it is always first an image. The image, the product of visualization, is most fundamentally communicated through the techniques of two-dimensional modeling we call drawing. Today's designer is privileged to own a vast range of technologies, ancient and modern, to devise comprehensive strategies for visualizing and communicating ideas. By integrating techniques the student will learn the appropriate tool to employ at any given point in the design process to effectively communicate to self and to others.

Prerequisites: DRAW-101, grade of "C" or better in ADFND-101

AENGR-200 0-8-4**Architectural Engineering Design**

This foundation course is required for Architectural Engineering. It is an introduction to design principles, vocabulary and process methodologies leading to the understanding of architectural and research process. Use of prevalent and emerging visualization tools for building information modeling (BIM) including REVIT will be covered.

Prerequisite: WRTG-101, ENGR-101, ENGR-102

AENGR-301 3-0-3**Structural Analysis I**

Structural Analysis I provides the basis and serves as a foundation for subsequent advanced Structural Analysis courses. Assumptions, principles of equilibrium in determining structures reactions, bending moments and shear diagrams will be discussed. Additionally, analysis of plane and space trusses, influence lines, computer analysis of determinate trusses, optimization in structural systems, approximate methods of analysis for indeterminate structures, determination of displacements by virtual work, and Castiglione's Theorem and moment area theorems will be taught.

Prerequisites: ENGR 215

AENGR-303 3-0-3**Structural Design with Compression Elements**

The main objective of this course is to provide students with a rational basis of the design of reinforced concrete members and structures through advanced understanding

of material and structural behavior. The subject will be approached by looking into the behavior of reinforced concrete at different levels – material level, element level and structural and systems level.

Prerequisite: AENGR-301

AENGR-305 **3-0-3**
Structural Design with Tensile Elements

The main objective of this course is to provide students with a rational basis of the design of tensile members, elements and structures through advanced understanding of material and structural behavior. The subject will be approached by looking into the behavior of steel, timber and fabrics at different levels – material level, element level and structural and systems level.

Prerequisite: AENGR-301

AENGR-307 **3-0-3**
Soil Mechanics

This course presents technical aspects of soil properties, identification and classification of earth materials, stress strain behavior of soils and movement of water through soils. The student will also be introduced to geotechnical design.

Prerequisite: ENGR 301

AENGR-400 **3-0-3**
Mechanical and Electrical Systems for Buildings

This course will introduce basic principles, types and applications of mechanical and electrical systems for buildings. Topics include air conditioning, heating, fire protection, electrical power and electrical lighting. Students will learn various design methods that impact building environment and indoor air quality.

Prerequisite: ENGR 322

AHIST-205 (Formerly A331) **3-0-3**
History 1: The Built Environment, Ancient to Medieval

By tracing significant historical themes, this course spotlights canonic examples of Western and non-Western architecture, interiors and landscape design from Ancient times to the Medieval period. Major monuments of Europe, Asia, Africa and the Americas are examined as solutions to technical problems, utilizing available materials, and as spatial and structural embodiments of cultural belief systems. Students acquire a working vocabulary for both analyzing and evaluating the built environment and material culture.

Prerequisite: WRTG-101

AHIST-206 (Formerly A332) **3-0-3**
History II: Renaissance/Baroque Architecture and Interiors (1300-1750)

Focusing upon global changes relative to urbanism, patterns of patronage and the intersection of church and state, this course highlights significant examples of Western and non-Western architecture and interiors produced from the 14th through the mid-18th centuries. Each case study is situated within a broad historical context and understood as paradigmatic of a period's values and aspirations that are given concrete form through available materials, construction methods and technologies. Students acquire a working

vocabulary for both analyzing and evaluating architecture, interiors, and material culture.

Prerequisite: AHIST-205

AHIST-305 (Formerly A531) **3-0-3**
History III: Early Modern Architecture and Interiors (1750-1930)

(writing intensive)

This course chronicles the impact of Enlightenment thinking and of the shifting definitions of modernity upon architecture and interior design by tracing the transition from Historicism to the International Style. New notions of progress and evolution; industrialization and urbanization; and debates concerning the role of the machine and the meaning of ornament are set against major technological advances. Students examine key theoretical texts and accomplish archival research on a historic structure in the Philadelphia area.

Prerequisite: AHIST-206

AHIST-306 (Formerly A532) **3-0-3**
History IV: Modern/Contemporary Architecture and Interiors (1930-present)

(writing intensive)

This course analyzes major movements and theoretical constructs that have dominated architecture and interior design from the post-World War II period until the present. Discussion focuses upon societal and environmental aspects – politics, economics, science and technology, psychology, etc. – that shape the greater context for architecture, interiors and the allied arts. Students examine key theoretical texts to evaluate current thinking relative to issues such as sustainability, critical regionalism, phenomenology and the role of the digital in contemporary practice.

Prerequisite: AHIST-305

ANIM-201 **1-5-3**
Introduction to Animation

This course will introduce students to the practice of animation and the various techniques employed in its production. Short exercises involving hand-drawn, stop-motion and other non-digital means will serve to expose students to the fundamental concepts involved. Students will then apply these concepts to their digital toolkit in order to create a longer final project.

Prerequisite: VSDES-101 and DRAW-101

ANIM-202 **1-5-3**
Storytelling and Storyboarding

This course will seek to give students a strong foundation in storytelling. Emphasis will be placed on visual storytelling, as the storyboard is the script for animation. In addition to story structure, students will explore screen composition and editing as means of relating narrative content. The class will consist of several storyboard exercises, culminating in the production of an animatic, a filmed version of the storyboard with a soundtrack.

Prerequisite: ANIM-201

ANIM-301N (Formerly ANIM-301) 0-10-4
Motion Graphics I

This major studio course explores time and motion in the creation of primarily graphic narratives. The techniques of abstraction, motion typography and musical synchronization are studied in the context of increasingly complex projects. A major aspect of the course will be the screening of both abstract films and reels from contemporary motion graphics films.

Prerequisite: ANIM-202

ANIM-303 3-0-3
History of Animated Cinema

(writing intensive)

This class will expose students to the range of animated cinema, from the early days of film to contemporary computer-generated work. Class will consist of screening and discussing a range of short and feature-length films. During the semester, students will be expected to write responses to the films as well as conduct further research into the medium and its history.

Prerequisite: ANIM-202 or permission of the director of the Animation program

This class will expose students to the range of animated cinema, from the early days of film to contemporary computer-generated work. Class will consist of screening and discussing a range of short and feature-length films. During the semester, students will be expected to write responses to the films as well as conduct further research into the medium and its history.

Prerequisite: ANIM-202 or permission of the director of the Digital Animation program

ANIM-307 1-5-3
3D Modeling

This course will give students a foundation in the concepts and techniques of 3D modeling and rendering. Specific attention will be paid to modeling environments, objects and characters. Students will explore polygonal, NURBS and subdivision-surface modeling and their respective workflows.

Prerequisite: ANIM-201

ANIM-308N (Formerly ANIM-308) 0-10-4
3D Animation

This course builds upon the concepts learned in 3D modeling to include animation and character setup. Special attention will be given to applying the techniques of traditional character animation to this contemporary medium. Projects will range from short animation exercises to a longer, character-driven piece. In addition, the class will view and discuss current and classic animated film.

Prerequisite: ANIM-307

ANIM-312 1-5-3
Motion Graphics II

This class explores the concepts covered in Motion Graphics I but with the introduction of 3D graphics and video as elements of motion graphics. In addition, the mediums of

dance, photography, architecture and painting will be discussed as possible inspirations.

Prerequisites: ANIM-301, ANIM-307

ANIM-313 0-10-4
Advanced Topics in 3D Animation

This class will allow students to delve deeper into areas covered in prior 3D classes. Topics include advanced modeling techniques, character setup, special effects, dynamics, lighting and rendering. The creation of a character interacting with its environment will drive the projects in this class.

Prerequisite: ANIM-308

ANIM-497N (Formerly ANIM-487) 0-12-6
Animation Capstone I

(writing intensive)

This course focuses on preparing the student to create a short film as their Capstone Project. The pre-production phase includes conceptualizing the story, writing the script and creating storyboards. In the process of preparing, students will also learn to schedule, budget and distribute their film. Before the end of the semester, students will have all the necessary materials to begin production on their short film.

Prerequisites: ANIM-312, ANIM-407

ANIM-499N (Formerly ANIM-499) 0-12-6
Animation Capstone II

This course represents the culminating experience for Animation students. Students are required to produce and deliver a short film, realizing the concepts they developed in the previous semester and synthesizing the knowledge and skills from the preceding courses. In addition, students will be required to produce a finished portfolio appropriate to the industry in which they will be pursuing further work.

Prerequisite: ANIM-497N

ARCH-201 (Formerly A311) 0-8-4
Design 3: Architecture Foundations Studies

This foundation course focuses on building the landscape using the elements, principles and theories of architectural and landscape design. Concurrently, specific theoretical issues related to design, organization and the interrelationship of interior and exterior space are explored. A particular emphasis is placed on an experiential and intuitive design process. The importance of the building "parti" as a response to naturally occurring context is stressed. Techniques of representation are developed and refined.

Prerequisite: grade of "C" or better in ADFND-102

ARCH-202 (Formerly A312) 0-8-4
Design 4: Architecture Foundations Studies

This foundation studio concentrates on general issues concerning "dwelling" and specific issues addressing housing and residential design are explored. Emphasis is placed on designing in the urban context. This course uses research and analysis of human patterns of occupancy and settlement as a means of exploration.

Prerequisite: grade of "C" or better in ARCH-201

ARCH-204 **3-0-3**
Great Buildings: Structure, Style and Context

This course surveys selected, key monuments of architectural history from ancient through modern times that are paradigmatic of building art and science during a particular period. The buildings spotlighted represent dominant “types” from pyramids to skyscrapers that are not only laboratories for innovative design and cutting-edge technologies, but also are expressive of the values and aspirations of the society at large. Developments in the areas of materiality and structural systems will be integrated with changing social, economic, political, stylistic and environmental demands that are normative of a particular time and place. Students majoring in Architecture, Historic Preservation and Visual Studies, Landscape Architecture or Interior Design are not permitted to take this course.

Prerequisite: WRTG-101

ARCH-212 (Formerly ARCH-211, A342) **2-2-3**
Technology 2: Passive Systems and Building Enclosure

This lecture/lab course examines technological issues relevant to passive environmental systems and sustainable technologies. Central to the course is a student’s understanding of the temporal nature of program and site and their impact upon the design of natural lighting, passive heating and cooling systems and issues of enclosure, materiality and skin, as well as their relation to our natural and built environments. (first offered spring 2011)

Prerequisite: ARCHDSN-210

ARCH-303 (Formerly ARCH-309, A541) **2-2-3**
Structures 1

This course merges structural design (form) and analysis as a simultaneous act and introduces the role of structural engineering in the architectural process. Students develop familiarity with the fundamentals of statics, gain a sense of how structures resist forces and learn to visualize the load path and the direction of forces. Material is learned while designing actual structures and details. Structural design and analysis is taught using both numerical and graphical analyses for the preliminary shapes of cable structures, arches, and trusses. (first offered spring 2011)

Prerequisites: MATH-103 or MATH-111, PHYS-101

ARCH-304 (Formerly ARCH-310, A542) **2-2-3**
Structures 2

Reinforcing concepts learned in Structures 1, this course presents the effect of cross-sectional properties on stresses in beams as well as the concept of bending as it is applied to beams, columns, slabs and walls in wood, steel and reinforced concrete. Also covered are the resistance of buildings and their components to lateral loads (wind and earthquake) and the introduction to structural grids and patterns for structural systems in wood, steel and concrete as they relate to gravity and lateral loads. (first offered fall 2011)

Prerequisite: ARCH-303

ARCH-311 **0-12-6**
Design 5 for Architecture

This topical studio explores the integration between individual buildings and urban design. The course focuses on creating community within the city. Students investigate socio-cultural and environmental aspects of the city as they relate to architecture. The studio includes discussion of architectural history, theory and principles as the basis for the making of architecture and urban form. (first offered fall 2011)

Prerequisites: 5-year B.Arch major, AHIST-206, grade of “C” or better in ARCH-202

ARCH-312 **0-12-6**
Design 6 for Architecture

This tectonics studio focuses on the theories surrounding the materials and processes of making architecture. Students investigate the inherent properties of building materials to understand their roles in informing and directing the design process. They explore methods of structure, enclosure, and assembly to analyze their effect on built form. (first offered fall 2011)

Prerequisites: Acceptance into 5-year B. Arch major, ARCH-212, grade of “C” or better in ARCH-202

ARCH-313 (Formerly ARCH-403, A741) **2-2-3**
Technology 3: Dynamic Environmental Systems

This lecture/lab course presents basic theory and application parameters associated with the dynamic building systems within the architectural environment. These include HVAC, power and data, lighting, acoustics, security, plumbing, vertical transportation and life and fire safety. Emphasis is placed on the relationships of these systems within the building structure and envelope, as well as the integration of design processes, the implementation of sustainable design principles, and the health, safety and welfare of users (first offered fall 2011)

Prerequisite: ARCH-212

ARCH-314 (Formerly ARCH-404, A742) **1-4-3**
Technology 4

Based on the principles learned in previous technology and structures courses, this course examines contemporary building systems (structural, mechanical and enclosure) in their comprehensive response to design and programmatic intent and environmental response. Through a study of typological structural systems and through examinations of varying building types, students examine current global precedents. Through media-intensive projects, students evaluate specific systems and create design solutions for specific conditions. (first offered Spring 2012)

Prerequisites: ARCH-304, ARCH-313

ARCH-320 **3-0-3**
Ecology and Making

The objective of this seminar is to broaden the base of understanding relative to the current discussion of sustainability and reveal some of the greater complexities of the topic. The course will include relevant design work, work outside of the realm of convention, and non-designers that have contributed greatly to the field. The semester’s readings will

explore the topic through different filters: technological, historical, philosophical, aesthetic, scientific, social, economic, political and cultural.

Prerequisites: AHIST-306 or LARCH-411 or INDD304

ARCH-321 (Formerly A618) 3-0-3

Itineraries of European Contemporary Architecture

During the period of the 1960s through the 1970s, architecture was both very radical and very expensive with only a few examples on the European landscape. Since the beginning of the 1990s, this has changed and Europe is showing strong signs of renewed vitality with an increasing number of outstanding buildings and bridges. This course will explore the different cultural, social, political and economic reasons associated with these changes in a variety of locations throughout Europe.

Co-requisite: STUAB-300

ARCH-324 (Formerly A624) 1-4-3

Visualization: Experimental Modeling

This advanced digital elective course focuses on the direct correlation between digital techniques and the design process. Complex three-dimensional modeling, rendering, animation, design visualization and presentation are emphasized in the course methodology. Using a variety of software, students complete a series of exercises of increasing difficulty leading to a final project that demonstrates the culmination of the skills developed throughout the semester.

Prerequisite: ARCHDSN-208

ARCH-326 (Formerly A623) 1-4-3

Visualization 2: Advanced Modeling

This advanced, computer-aided design course focuses on complex three-dimensional modeling, photo-realistic rendering and virtual reality; with an emphasis on using 3-D Studio Advanced modeling and rendering software. Interactive media and digital imaging are introduced in order to increase the effectiveness of student presentations. Students complete a series of specifically designed exercises of increasing difficulty leading to a final project of the student's choosing from a concurrent or earlier design studio.

Prerequisite: ARCHDSN-208

ARCH-341 3-0-3

American Architecture

What makes the built environment in America unique? How has American design changed over the generations? What were architects, clients and critics thinking? Where will American architecture go in the future? Using history, sociology and the humanities, we will address these types of questions as we examine American architecture according to themes such as the iconic American home, public buildings, buildings for work and play and American architectural practice.

Prerequisites: AHIST-206 or LARCH-206

ARCH-371 (Formerly A619) 3-0-3

Design Theory: Special Topics

This upper-level course is organized to take advantage of faculty members' expertise and the interests of the student

body. All topics chosen require that students have completed basic courses in architectural history and theory, so that this course can focus on (1) an advanced analysis of theoretical texts in architecture, literary texts and buildings; and (2) an examination of architecture as a cultural discipline that seeks to accommodate contemporary human needs and natural situations.

Prerequisite: AHIST-306 or LARCH-411

ARCH-401 0-12-6

Design 7 for Architecture: Studio Options

This studio permits students to customize their professional education by offering a series of options, including study abroad architectural studio, design-build studio, interdisciplinary studio, design studio within another discipline or another option approved by the program director.

Prerequisites: grade of "C" or better in both ARCH-311 and ARCH-312

ARCH-409 (Formerly A610) 3-0-3

The Great American City

The American city is examined from multiple viewpoints — historical, theoretical and critical — and with respect to specific communities, as well as to general issues. Themes include the initial founding of settlements and their growth, the architectural character of the communities and how character relates to the socioeconomic and physical environments and the contribution of all these factors toward the specific image or reputation associated with America's best known or "most typical" cities and towns. Field trips vary by semester and are required.

Prerequisites: AHIST-206 or LARCH-411

ARCH-410 (Formerly A613) 3-0-3

Vernacular Architecture

This elective course provides the groundwork for the study of architecture built without architects or in some other way, unlike the buildings that comprise the standard architectural canon. Scholars estimate that 95 percent of buildings fall into this category. Depending on faculty expertise, focus will be on national and regional traditions, non-Western traditions or a combination of the two. Examples of vernacular architecture will be examined in the context of their materials, building technology, climate and culture.

Prerequisite: AHIST-206 or LARCH-206 or approval of the instructor

ARCH-412 0-12-6

Design 8 for Architecture

This comprehensive course demands that students work in teams integrating constructional, structural and environmental systems in the design and documentation of a large and complex building. Students research building type and systems precedents and their resulting impact on built form, analyze material properties, specify component building

systems and apply codes and standards to fulfill technical, programmatic and aesthetic needs. (first offered Fall 2012)
Prerequisites: ARCH-314; grade of "C" or better in both ARCH-311 and ARCH-312
Co-requisite: ARCH-416

ARCH-413 (Formerly A841) 2-2-3
Experimental Structures

This elective lab/seminar course is an exploration into the architectural potential of form-active structures (including thin-shell, tensile-membrane and fabric structures), and new and alternative materials and methods of construction. Unlike conventional structures that rely on their internal rigidity, form-active structures rely purely on their geometric shape to carry loads, thus providing a base for experimenting with form to create innovative solutions for structural-design problems.

Prerequisite: ARCH-304 or AENGR-305

ARCH-414 (Formerly A844) 2-2-3
Experimental Materials

This elective lab/seminar course is a hands-on exploration into the mechanical properties and aesthetic potential of materials in the built environment. The course encourages experimentation with both new materials and non-traditional use of existing materials toward the full-scale production of architectural objects and building components. Implications of craft and technology underscore research and production. Students complete several smaller individual projects and a larger group project of longer duration.

Prerequisite: ARCH-303 or AENGR-301

ARCH-415 (Formerly A628) 1-4-3
Visualization: Multimedia

This interdisciplinary course focuses on Interactive CD-ROM design, web page design and digital-video production. Students begin by reviewing basic two-dimensional, design-communication concepts as a prelude to more complex projects involving various digital media. The course is primarily taught on the Macintosh platform and features software such as Adobe Premier, Macromedia Flash and Macromedia Director. Students create their own individualized final project as approved by the instructor.

Prerequisite: ARCHDSN-208 or GRAPH-202

ARCH-416 (Formerly ARCH-511, A845) 1-4-3
Technology 5: Documentation and Detailing

This course focuses on the important role of construction materials and systems in the design process through the creation of technically precise computer generated drawings. Students develop their own design into a set of technical documents and details that enhance the project concept. They utilize two-dimensional CAD and BIM computer software to convey their technical design intentions. (first offered Fall 2012)

Co-requisite: ARCH-412

ARCH-418 (Formerly A842) 3-0-3
Housing and Construction Technology

This elective seminar course explores interrelated issues of housing, land and construction. Discussions and research center around how historical and cultural concepts of the home- and land-use have brought housing to its present condition, and how current concerns about land use and construction technologies might effect a change.

Prerequisite: ARCH-212 or LARCH-207

ARCH-421 (Formerly A631) 3-0-3
Introduction to Historic Preservation

This course provides an introduction to the field of Historic Preservation. The goals include: development of discipline-specific terminology; overview of preservation law, policies and advocacy; analysis of current issues relative to sustainability, preservation and adaptive reuse. Field trips to sites and guest speakers complement lecture/discussion format.

Prerequisites: ADFND-102 or INTD-102, or LARCH-102

ARCH-422 (Formerly A703) 3-0-3
Theories of Architecture: Seminar

This seminar will focus on selected topics that characterize architectural theory during the "Modern" era – from the late-19th century to the present. As a historical survey of the fundamental principles that have shaped architectural thinking, the course will review, in a critical way, the major issues that have influenced both the meaning of and the practice of architecture during that time: the relationship of architects to their work and to the culture-at-large; the impact of technology and politics; and the spatial experience of a building. Theorists' critiques of contemporary practice will be emphasized, and current theories will be explored in an attempt to clarify an approach to the study and practice of architecture.

Prerequisites: AHIST-306 or LARCH-411

ARCH-423 0-8-3
Architecture Fellowship

This course is designed to allow students to take the first step towards learning to be a teacher. During the semester students will be linked one-to-one with a section of a foundation design studio. Participation in desk critiques and the review process, as Studio Assistants rather than as the student, allows upper level students the opportunity to share their knowledge with foundation students. In return by revisiting the fundamentals as a Studio assistant, students will be able to reevaluate the work they are doing in their own coursework and to develop further their critical, analytical, speaking and communication skills.

ARCH-424 2-2-3
Historic Preservation Documentation: Drawing

Begun in 1933, the Historic American Building Survey (HABS) is the first federal preservation program established to document America's architectural heritage. In this course, students learn the fundamentals of HABS documentation methods for the production of archival records of historic structures and places, utilizing technical drawing skills, both hand drafting and computer-aided drafting (CAD). Through field work and labs, students survey, sketch, draft, research

and annotate comprehensive, technically proficient drawings that represent the salient aspects of historic structures, complexes and sites in accordance with HABS standards.

Prerequisites: ARCH-421 and ARCHDSN-208

ARCH-425 (Formerly A611) 3-0-3
Meaning in Architectural Ornamentation

This elective course raises some theoretical questions that are relevant to contemporary practice. What is ornament? How and why have attitudes toward architectural ornamentation changed through history? Is ornament essential to architecture? Lectures will be presented following a reconstructed chronology of theoretical topics; from the things (*res materialis*) of which architecture consists; to the “rules” and “abuses” of classical ornament; to the role of imitation; to the effects of the Industrial and Post-industrial Revolutions on theories of ornament. The relationship between the forms and the materials of ornament will be examined in lecture and group discussions.

Prerequisite: AHIST-206 or LARCH-411

ARCH-426 (Formerly A636) 1-4-3
Design/Build

Through a combination of lecture and lab, students apply knowledge of building technologies and structural systems to the design and construction of a project at appropriate scale. Working under the supervision of faculty, students research, plan and build their solution to a problem of topical interest.

Prerequisite: ARCH-212 or LARCH-207

ARCH-430 (Formerly A637) 1-4-3
Architecture in Education

Each student is teamed with a practicing architect and a classroom teacher to develop and carry out an eight-week program for a class of school children (elementary through high school). The emphasis is on hands-on activities and direct experiences (neighborhood walks, etc.) that introduce the children to the basic principles of architecture and the built environment. The program is in collaboration with the Foundation for Architecture, the Philadelphia Public School District and local architecture firms.

Prerequisites: ARCH-202 or LARCH-202; WRTG-215; and the ability to travel to sites away from campus

ARCH-431 (Formerly A762) 0-2-1
Portfolio Presentation

This course focuses on the evaluation, documentation, layout and formal presentation of the student’s work. Writing and verbal skills are emphasized as an important aspect of presenting a portfolio. Various graphic techniques are introduced.

Prerequisites: grade of “C” or better in both ARCH-311 and ARCH-312 or LARCH-302; or grade of “C” or better in INTD-401

ARCH-434 (Formerly A614) 3-0-3
Water and Architecture

The rich architecture of public water in urban and rural contexts is a key to the cultural landscape. From the gravity

systems of a Roman city, through the rich world of medieval water, and concluding with water powered by outside energy, students will study Western, Arab and Asian water systems. Through architecture, the course will link the technology of water cycles, purity, collection and storage with the aesthetics and rituals of culture.

Prerequisite: SOC-2XX

ARCH-466 2-2-3
Preservation Technology

Buildings are composites of materials with unique properties and characteristics. This course provides a comprehensive overview of the materials used in the construction of historic structures and the ongoing processes of material deterioration. Through hands-on case studies, students acquire the skills to evaluate and diagnose the physical problems afflicting historic structures and to recommend conservation and stabilization methods using traditional and contemporary techniques.

Prerequisite: ADFND-102 or INTD-102, or LARCH-102

ARCH-499 1-4-3
Construction Capstone Project

This course develops a higher level understanding of the construction process by examining the problem solving that begins with conception and progresses through the completion, start-up and maintenance of a project. Utilizing the technical design drawings that students completed in ARCH-324 Visualization: Experimental Modeling and generated through Building Information Modeling (BIM) software, this course provides an opportunity to simulate the progressive stages of a construction project, thereby synthesizing knowledge and skills acquired in previous coursework.

Prerequisites: ARCH-428, ARCH-324

ARCH-503 (Formerly ARCH-505, ARCH-506) 3-0-3
Professional Management

This course focuses on the nature of the architect’s practice and on office proprietorship typologies, through detailed studies of legal, financial, marketing and management issues. Using individual projects, it examines the project process – from development through construction, including administrative procedures, economic systems, codes, standards and regulations – as well as various professional disciplines’ responsibilities and requirements for professional registration. Contractual and ethical obligations of the architect, particularly in response to client needs and safety, as well as codes, standards and regulations are covered. (first offered Fall 2013)

Prerequisites: grade of “C” or better in both ARCH-311 and ARCH-312 or LARCH-302

ARCH-507 0-12-6
Design 9 for Architecture

This studio combines seminar and workshop elements in a non-linear manner to allow students to develop the architectural agenda explored in their position papers done for the required theory seminar. Students engage in a rigorous process uniting research, analysis, and design. Each studio

section is topical according to the curricular streams identified in the students' work. It is the first half of a year-long sequence. (first offered Fall 2013)

Prerequisites: grade of "C" or better in ARCH-402; grade of "C" or better in one of the following: ARCH-434, ARCH-320, ARCH-410, ARCH-341, ARCH-371, ARCH-422, or another course approved by the program director.

ARCH-508 **0-12-6**
Design 10 for Architecture

The second half of a two-semester sequence, this course allows students to complete their architectural agenda, resulting in a thorough public presentation before a jury of faculty and professionals. (first offered Spring 2014)

Prerequisite: grade of "C" or better in ARCH-507

ARCHDSN-208 (Formerly A321) **1-4-3**
Visualization 1: Digital Modeling

The primary intent of this course is to establish the computer as an effective tool in the design and presentation process. The course will focus on two primary areas in this regard: visualizing design concepts in three dimensions and communicating those concepts in a manner consistent with studio level work. Each project will explore various methods of describing two and three dimensional objects and spaces.

Prerequisite: grade of "C" or better in ADFND-102 or grade "C" or better in INTD-102

ARCHDSN-210 (Formerly A341) **2-2-3**
Technology 1: Materials and Methods

This course focuses on the presentation of the technical factors of construction that affect a building's structure. Students are introduced to and compare the nature and structural characteristics of the major construction systems of wood, masonry, steel and concrete. Structural principles, as well as building and zoning codes, are introduced and their influence on form and choice of materials is emphasized.

Prerequisite: grade of "C" or better in ADFND-102, or INTD-102, or AENGR-200

ARCHDSN-214 (Formerly A602) **2-2-3**
Model Building

This elective course focuses on the visualization of ideas in three dimensions. Fundamentals of model building are studied from a perspective that stresses the relationship between the design process and the application of current model-building techniques. Assignments emphasize the development of skills necessary to construct models and the ability to budget for time and materials. Mock-ups, quick sketch models and final presentation models are stressed.

Prerequisite: grade of "C" or better in ADFND-101

ARCHDSN-381 (Formerly A999) **0-0-3**
Independent Study in Architecture, Interior Design and Landscape Architecture

For further details, see general description of Independent Study in "Academic Policies" section.

Permission required. See appropriate form online at the University Registrar's webpage www.philau.edu/registrar/ for more information.

ARCHDSN-493-494 (Formerly A791) **0-0-(3 or 6)**
Architecture Internship I and II

A professional internship provides an opportunity for professional experience supporting application and further development of the knowledge gained in the classroom. Under faculty supervision, students work in positions related to the major, minor and/or career goal, develop learning objectives and complete reflective academic assignments. Students should be exposed to a broad spectrum of professional practice, particularly those not available in the academic setting, and are expected to make a professional contribution to their employer.

Prerequisites: 2.5 G.P.A.; completion of 60 credits for ID or 90 credits if AR or LA; and permission of the Internship director. Additional requirements may apply. See "Internship Program" section for further details.

ARCST-300 **2-2-3**
Exhibition Design and Planning

The renaissance of museums, product display and exhibitions has made the making of exhibitions a significant, recognizable and highly valued skill as well as profession. This course covers the fundamentals of exhibition design, as well as its history, theory and practice. Through the use of lecture based case studies, field trips to exhibitions and studio work, students will not only learn to develop, design, build and document exhibitions, but to prepare written design proposals, didactic exhibition material, and exhibition critiques. Emphasis will be on the narrative used to create exhibitions, employing scale, color, materials, lighting, sound and graphics.

Prerequisite: ADFND-102 or INTD-102 or LARCH-102 DSGNFND-203 or INDD-102

AREAST-201 (Formerly L351) **3-0-3**
Europe

A multidisciplinary study of European society, history and culture with emphasis on the 20th century. Through a variety of materials and approaches including fiction, visual sources, political commentary and cultural artifacts, this course will examine the rise of the European community and the continuing conflict between ethnic, cultural and political forces in the region.

Prerequisite: WRTG-101, HIST-11X

AREAST-202 (Formerly L352) **3-0-3**
Latin America

A multidisciplinary introduction to Latin American history, society and culture through a variety of materials including literature, film, music, journalistic accounts and history with emphasis upon the 20th century. The course will emphasize

the complex interplay between indigenous, Iberian and African influences in the forging of the continent's past, present and future. Students will examine the roots of everyday and state violence, as well as the current controversies over "liberalization" and "market" economies.

Prerequisite: WRTG-101, HIST-11X

AREAST-205 (Formerly L353) 3-0-3

East Asia

A multidisciplinary course examining the shifting relationship between "tradition" and "modernity" in East Asia. The course will explore such topics as kinship, gender relations and stratification systems in the Asian past and present. Students will investigate some of the different paths of development that Asian societies have followed in the last two centuries including communism and state-directed capitalism. The course will close with Asia's increasing significance in the globalization of capitalism.

Prerequisite: WRTG-101, HIST-11X

AREAST-208 (Formerly L354) 3-0-3

Africa

A multidisciplinary introduction to African civilization through a variety of sources including oral epics, film, music, literature, ethnographies, historical studies and visual materials with emphasis upon the 20th century. The course will investigate such topics as the cultural roots of African leadership, the enduring importance of family and community, the impact of the trans-Atlantic trade in human beings on African societies, the struggle to achieve a just, multi-ethnic society in Southern Africa and the present continent-wide democratization process.

Prerequisite: WRTG-101, HIST-11X

AREAST-210 (Formerly L355) 3-0-3

Middle East

The contemporary Middle East will be examined from an interdisciplinary perspective, including the region's history, geography, politics, economy, religions and cultures with emphasis upon the 20th century. The course aims to promote an understanding of the social dynamics of this region, as well as to provide the basic tools for a better understanding of world events in general.

Prerequisite: WRTG-101, HIST-11X

AREAST-220 (Formerly L356) 3-0-3

Great Britain: Study Abroad Preparation

An interdisciplinary study of Great Britain (England, Scotland, Wales and Northern Ireland) including social, political, economic and cultural issues with particular emphasis on the post-1945 period. Students will also learn how to understand cultural difference and to cope with culture shock.

This course prepares students for study abroad programs in Great Britain. Open to all students.

Prerequisite: WRTG-101, HIST-11X

AREAST-226 3-0-3

Italy: Study Abroad Preparation

A multidisciplinary study of Italy including social, political, economic and cultural issues with particular emphasis upon

the post-1945 period; attention is given also to Italy's role in Europe. The course also introduces students to how to learn a language and basic communication skills in Italian needed to cope with daily living in the society, with a special emphasis on issues relating to "culture shock" when living, working and studying in Italy.

Prerequisite: WRTG-101, HIST-11X

AREAST-227 3-0-3

India and South Asia

A multidisciplinary introduction to the Asian Subcontinent, including the countries of India, Pakistan, Bangladesh and Sri Lanka. The region's modern history, geography, politics, economies, religions, cultures and social issues are each discussed in an integrative manner. Regional popular culture, including modern music, literature and cinema, are also analyzed in order to help students understand the rapidly changing nature of this region today.

Prerequisites: WRTG-101, HIST-11X

AREAST-383 (Formerly L949) 0-0-3

Independent Study in Area Studies

See the statement on Independent Study in the "Academic Policies" section.

Permission required. Also see appropriate form online at the University Registrar's webpage <http://www.philau.edu/registrar/> for more information.

ARTH-101 (Formerly T771) 3-0-3

History of Western Art I

The evolution of Western painting, sculpture and architecture from pre-history to the 16th century is covered. A thorough foundation in art and ideas with special emphasis on styles is presented as inspiration for designers.

ARTH-102 (Formerly T772) 3-0-3

History of Western Art II

The evolution of Western painting, sculpture and architecture from the 16th century to the present is covered with the same emphasis on styles.

ARTH-314 (Formerly T773) 3-0-3

History of Textiles and Costumes

A multi-faceted survey of textiles and costumes from ancient cultures to the present, technical- and visual-design aspects of the textile arts, the influence of trade on design trends, styles in period costume and the sociological implications of dress are all incorporated.

Prerequisite: VSDES-101 or FASHDES-2XX or FASHDES-423

ARTS-105 (Formerly HUMN-105 and L155) 3-0-3

Music

Music is an important form of human expression and creativity. This course combines music appreciation with attention to why certain societies produced kinds of music. Previous knowledge of music is not required.

ARTS-120 (Formerly HUMN-120 and L151) 3-0-3

Performing Arts

The purpose of this course is to help students acquire a critical appreciation both for the process of creating various

forms of art and for the final products in theater, musical theater, opera and dance. The course will also explore how aesthetic values are influenced by society. Students will be required to attend professional performances in the Philadelphia area.

ARTS-123 (Formerly HUMN-123 and L152) 3-0-3
Ideas and Images

Beginning with analysis of basic visual and compositional elements, students will discover how artists and designers have created images that express and reflect cultural values. Historical and cross-cultural connections are emphasized in seminar approach. May not be taken by any design or architecture major. This course may be used to satisfy a College Studies requirement, but not free elective credits.

BIOL-101 (Formerly L311) 3-2-3
Current Topics in Biology

(for non-science majors)

Explore *contemporary biological* topics that you hear and read about or that are part of your daily life and learn the fundamental scientific concepts that underlie them. Topics will cover molecules to cells and organisms to populations as well as inheritance, development, infectious disease and what constitutes well-supported science. The course utilizes projects, hands-on activities, online discussions and group work to illustrate concepts.

BIOL-103 (Formerly L323) 3-0-3
Biology I

(required for Science majors)

The objective of this course is to gain an understanding of the cellular, molecular and genetic basis of life. Students will be introduced to the physical and chemical principles involved in biological processes, the microscopic world of the cell, regulation of gene expression and the laws that govern inheritance. This course and BIOL-104 and BIOL-104L Biology II are the introductory courses for science majors.

Co-requisite: BIOL-103L

BIOL-103L (Formerly L323) 0-3-1
Biology I Laboratory

This laboratory course reinforces the understanding of cellular, molecular and genetic processes learned in Biology I lecture. Exercises include microscopic examination of cells and tissues, biochemical analysis of enzyme activity, osmosis, cellular respiration and genetic investigation, including electrophoretic analysis of mutation.

Co-requisite: BIOL-103

BIOL-104 (Formerly S212) 3-0-3
Biology II

(for science majors)

In this course students will apply the principles learned in Biology I to the structure and function of organisms. Physiological processes that will be examined include

nutrition, gas exchange, transport and regulation of body fluids, chemical and nervous control and reproduction.

Co-requisite: BIOL-104

Prerequisite: grade of "C-" (1.67) or better in BIOL-103 and BIOL-103L

BIOL-104L (Formerly S212) 0-3-1
Biology II Laboratory

(for science majors)

In this course students will apply the principles learned in Biology I to the structure and function of organisms. Physiological processes that will be examined include nutrition, gas exchange, transport and regulation of body fluids, chemical and nervous control and reproduction.

Co-requisite: BIOL-104

Prerequisites: grade of "C-" (1.67) or better in BIOL-103 and BIOL-103L

BIOL-106 3-0-3
Biology for Design: From Biological Adaptation to Biomimetic Design

The goal of this course is to increase the sophistication of design, engineering, business and other students regarding how design manifests itself in nature as biological adaptation, and to use that knowledge as a launching pad for thinking about biomimetic design. Biomimicry is a hot topic in architecture and design. Work in this field is usually done by designers working in collaboration with biologists who are highly specialized in a particular area, often plant or animal physiology. However, there are certain conceptual underpinnings pertaining to design and adaptation in nature that designers are often lacking that will prepare them for further exploration of this field. The course consists of two major units, the first focusing on the biology of adaptation from an evolutionary and ecological perspective. The second section consists of a survey of biomimetic design and how biomimicry has been employed to solve a range of design problems in architecture, materials science, systems design and technology.

Prerequisites: None

BIOL-201 (Formerly S218) 3-0-3
Human Anatomy and Physiology I

This course is the first of a two-semester sequence. This course will examine anatomical and physiological aspects of the following systems of humans: tissues, integumentary, musculoskeletal and neurologic. A close correlation between lecture and laboratory topics will be maintained. During lecture, both anatomy and physiology will be discussed however greater emphasis will be placed on the physiology of each system while during the laboratory session, greater emphasis will be placed on anatomy.

Co-requisite: BIOL-201L

Prerequisites: grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L

BIOL-201L (Formerly S218) 0-2-1
Human Anatomy and Physiology I Laboratory

The A&P laboratory sessions will provide students with hands-on learning opportunities to help conceptualize

content discussed in lecture. During lab, students will work on problem sets, examine and dissect organs and/or anatomical models, use microscopes, perform basic physiological experiments and examine cadaver specimens. During laboratory sessions of the first half of this two-semester course, emphasis will be placed on the anatomy of the relevant system.

Co-requisite: BIOL-201

Prerequisites: grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L

BIOL-202 (Formerly S219) 3-0-3
Human Anatomy and Physiology II

This course is the second of a two semester sequence. This course will examine anatomical and physiological aspects of the following systems of humans: sensory, endocrine, circulation, respiration, nutrition-digestion, excretion and reproductive. During lecture, both anatomy and physiology will be discussed. While some lab sessions will focus mainly on the anatomy of the current system, most laboratory sessions will involve physiological experiments to provide students with greater insight into the physiology of the current system. A close correlation between lecture and laboratory topics will be maintained.

Co-requisite: BIOL-202L

Prerequisites: BIOL-201 and BIOL-201L

BIOL-202L (Formerly S219) 0-2-1
Human Anatomy and Physiology II Laboratory

The A&P laboratory sessions will provide students with hands-on learning opportunities to help conceptualize content discussed in lecture. During lab, students will work on problem sets, examine and dissect organs and/or anatomical models, use microscopes, perform basic physiological experiments and examine cadaver specimens. While some lab sessions will focus mainly on the anatomy of the current system, most laboratory sessions will involve physiological experiments to provide students with greater insight into the physiology of the current system.

Co-requisite: BIOL-202.

Prerequisites: BIOL-201 and BIOL 201L

BIOL-204 (Formerly S213) 3-0-3
Cell Biology

This course focuses on both structure and function of cellular components. Cellular structure is investigated from the molecular level to macromolecular assemblies and organelles with the major emphasis on how these structures function to form a dynamic cell interacting with its environment. Cell growth, reproduction and communication are discussed. Cells studies include single cells to those organized into tissues in multicellular organisms.

Co-requisite: BIOL-204L

Prerequisites: CHEM-201 and CHEM-201L, grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L

BIOL-204L (Formerly S213) 0-3-1
Cell Biology Laboratory

The purpose of this laboratory is to introduce the student to some of the procedures and techniques used to investigate

cell structure and function, including use of the microscope, differential cell fractionation and biochemical exercises.

Co-requisite: BIOL-204

Prerequisite: CHEM-201 and CHEM 201L, grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L

BIOL-205 (Formerly S217) 3-0-3
Plant Biology

(writing intensive)

Students will study the diversity and evolution of plants, their structure, selected physiological processes and current topics in plant biology.

Co-requisite: BIOL-205L

Prerequisites: grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L

BIOL-205L (Formerly S217) 0-3-1
Plant Biology Laboratory

(writing intensive)

This laboratory course includes the examination of algae to flowering plants, and cells, tissues and organs to whole plants. Plant species will be propagated by cloning and spore culture.

Co-requisite: BIOL-205

Prerequisites: grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L

BIOL-207 (Formerly S227) 3-0-3
Principles of Genetics

This course will consider Mendelian genetics and the contributions of other early research on our present knowledge. Included will be crossover consequences, gene mapping, sex linkage, statistical genetics, mutation, chromosome abnormalities and human genetics.

Co-requisite: BIOL-207 L, Prerequisite: grade of "C-" or better in BIOL-104 and BIOL-104L

BIOL-207L (Formerly S227) 0-3-1
Principles of Genetics Laboratory

This is the laboratory course that must be taken to complete the genetics requirement. The laboratory exercises use current techniques of DNA technology as applied to disease diagnosis, forensic determinations and the isolation and structural examination of the DNA molecule.

Co-requisite: BIOL-207, Prerequisites: grade of "C-" or better in BIOL-104 and BIOL-104L

BIOL-209 (Formerly S235) 3-0-3
Medicinal Plants

(writing intensive)

This course focuses on the use of plants and plant products in human health. Topics include a survey of plants and plant families with medicinal properties, their cultivation and conservation, physiological effects of plant extracts, plant-derived drugs, historical and cultural aspects of medicinal plant use.

Prerequisite: grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L

BIOL-221 (Formerly S221) 3-0-3**Microbiology**

(Writing Intensive)

This course provides an introduction to environmental, industrial, food and medical microbiology. An understanding of the methods by which microbes produce disease, as well as interact with body surfaces to maintain human health, is also discussed.

Co-requisite: BIOL-221L

Prerequisites: grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L

BIOL-221L (Formerly S221) 0-3-1**Microbiology Laboratory**

Laboratories are designed to complement and expand information from lectures. Students will gain experience in classical techniques used by environmental and clinical microbiologists for determining unknown bacteria and molds. Practical studies will also compare historical and current methods for physical and chemical removal of microbes.

Co-requisites: BIOL-221

Prerequisites: grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L

BIOL-302 3-0-3**Medical Genetics**

This course in medical genetics deals with the definition of the role of genetic variation and mutation in a predisposition to disease, modifying the course of disease or causing the disease itself. It will cover single gene defects caused by a critical error in the information carried by a single gene, diseases due to an excess or deficiency of the genes contained in whole chromosomes or segments of chromosomes, and multifactorial inheritance diseases which result of more than one genes which can act together to produce or predispose to a serious defect. The course will also introduce methods of collecting and interpreting a family history as an integral tool in medical genetics, and integrate this in all aspects of the presentation.

Prerequisites: BIOL-207 and BIOL-207L

BIOL-303 (Formerly S236) 3-3-4**Histology**

Histology provides students with an integrated perspective of how adaptations in physiology, biochemistry and morphology allow cellular organization into human organs and support systems. Laboratory studies will introduce students to abnormal embryology, which is the core of many aspects of disease, especially those affecting children. Along with analysis of prepared slides, students will learn to interpret and present abnormal histology/embryology in the form of "case histories."

Prerequisites: grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L and junior status

BIOL-307 (Formerly S226) 3-0-3**Embryology**

This course is an elective for students who have completed two semesters of science-major Biology. It will consider animal embryology from gametogenesis (of sperm and egg) to

organogenesis (development of organs) and specification. The course includes cytogenesis (development of cells) and morphogenesis (change in body form) of the developing embryo.

Prerequisite: grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L

BIOL-312 (Formerly S215) 3-4-4**Biochemistry I**

Biochemistry I introduces the student to protein chemistry, protein structure/function relationships and basic enzymology. It also covers chemistry of carbohydrates and lipids with particular emphasis on human metabolism of these compounds. The lab section introduces some basic techniques used routinely in a biochemistry research setting including protein purification, enzyme kinetics and carbohydrate chemistry.

Prerequisite: grade of "C" or better in CHEM-202 and CHEM 202L

BIOL-313 (Formerly S216) 3-4-4**Biochemistry II**

Biochemistry II continues the metabolic theme of Biochemistry I with emphasis on nitrogen-containing compounds (amino acids, urea cycle and nucleotide biosynthesis). Also considered are biological membranes, transmembrane transport and signaling. The course concludes with the biochemistry of polynucleotides (DNA and RNA) and protein biosynthesis and trafficking. The lab section continues the theme of Biochemistry I lab with studies on carbohydrate chemistry, lipid chemistry and handling of polynucleotides.

Prerequisite: grade of "C" or better in BIOL-312

BIOL-315 (Formerly S228) 3-0-3**Immunology**

(writing intensive)

The objective of this course is to introduce students to the innate mechanisms by which the human body prevents infection, as well as those involved in specifically acquired immunity. Topics include the structural, functional and genetic aspects of a fully competent immune system that can successfully prevent attack by millions of microorganisms each day. Exploration of the many medical conditions which result from hyperactive- or impaired-immune responses, including allergy, autoimmunity, cancer and AIDS, are studied.

Prerequisites: BIOL-221 and BIOL-221L

BIOL-371 (Formerly S220) 3-0-3 or 3-3-4**Selected Topics in Biology**

This course provides an opportunity to explore topics in biology not developed in other courses. Examples include specialized areas of organismal biology, conservation biology, developmental and molecular biology. Students may take this course more than once as the topics differ each time it is offered.

Prerequisite: grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L or permission of instructor

- BIOL-391 (Formerly S231) 0-9-3**
Research in Biology I
 Independent research is taken under the guidance of a faculty member. The research will include a written proposal prior to initiation of the project, a literature search, experimental work, a written abstract and report upon completion of the semester and an oral presentation of the work. Guidelines for approval and for final evaluation are available in the College of Science, Health and the Liberal Arts office. *Prerequisite: permission of the academic associate dean of undergraduate programs in the College of Science, Health and the Liberal Arts.*
- BIOL-392 (Formerly S232) 0-9-3**
Research in Biology II
 Continuation of BIOL-391. *Prerequisites: BIOL-391, permission of the academic associate dean of undergraduate programs in the College of Science, Health and the Liberal Arts.*
- BIOL-401 (Formerly S214) 3-3-4**
Molecular Biology
 The first segment of this course deals with molecular genetics with emphasis on in-class experiments. This is followed by a detailed treatment of the molecular basis of genetics, involving the structure and functions of the DNA molecule, chromosome maps, etc. The course concludes with a seminar-type discussion of disease states that have been shown to be genetically linked. *Prerequisite: grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L*
- BIOL-402 3-0-3**
Genetics Seminar
 This writing intensive course will expose the student to the fields of population genetics and several emerging and important subdisciplines (behavioral, conservation and evolutionary genetics). Human health will be a recurring theme. The seminar format will encourage an independent learning experience. Papers and presentations will build research, communication and critical thinking skills. *Prerequisites BIOL 207 and BIOL 207L, WRTG 2XX*
- BIOL-407 (Formerly S229) 3-3-4**
Comparative Vertebrate Anatomy
 A comparative study of the structure, function and evolutionary relationships of the major vertebrate groups. *Prerequisite: grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L*
- BIOL-409 (Formerly S230) 3-3-4**
Cellular Analysis
 This course will teach fundamental methods of contemporary cellular and biotechnology. Laboratory exercises focus on microscopic, biochemical and molecular analysis of cells and cell structures. *Prerequisites: BIOL-204 and BIOL-204L*
- BIOL-411 (Formerly S298) 3-0-3**
Life Science Seminar
(writing intensive)
 The course covers recent advances in the biological and medical sciences by way of formal presentations and discussions involving both students and invited faculty. In addition, students will learn techniques for the preparation of a research project involving a literature search. Students will be required to carry out a research project and present a formal seminar on this work to their peers. *Prerequisites: grade of "C-" (1.67) or better in BIOL-104 AND BIOL-104L and senior status*
- BIOL-413 3-3-4**
Pathology
 Pathology represents an integrated perspective of how disease results from a series of common, underlying changes resulting from initial and continued cell stresses. Students will relate disease processes to the symptoms and signs reported by patients and interpreted by physicians through the use of case history presentation and will acquire a variety of light microscopy techniques routinely used in hospitals for the diagnosis and monitoring of abnormal pathology. *Prerequisites: BIOL-202 and/or BIOL-303*
- BIOL-493, BIOL-494 (Formerly S290, S291) 0-0-3, 0-0-3**
Preceptorship I and II
 The preceptorship experience is designed to enhance the student's knowledge, technical skills and problem-solving abilities within the biomedical science realm. These studies will be performed off campus under the supervision of biomedical professionals and other practitioners in the medical sciences, previously approved by the program director. Designed to be taken as summer classes between the sophomore and junior years. A minimum of 54-hours required, preferably as six, one-week periods of nine hours per week.
- BLAW-301 (Formerly B421) 3-0-3**
Business Law I
 Lecture, class discussion and case problems emphasizing legal principles on the following topics: the legal environment, government regulation of business, contracts, personal property, environmental liability as it relates to business transactions, bankruptcy, employment and human resources, and current legal issues. The legal environment as it impacts business decision making is addressed.
- BLAW-302 (Formerly B422) 3-0-3**
Business Law II
 Lecture, class discussion and case problems emphasizing legal principles on the following topics: agency, corporations, partnerships and joint ventures, commercial paper and real property, limited liability companies, international legal environment and current legal issues. *Prerequisite: BLAW-301*
- BUS-101 (Formerly B301) 3-0-3**
Survey of Business (non-business majors)
 This course is designed to provide the non-business major with a basic foundation in a broad range of business

subjects including economics, organizations and human resources, accounting, finance, marketing, business law, ethics, cultural diversity and strategic management. It may be taken by non-business majors as a free elective or as the first course in the sequence for the business minor. This course may not be used by business majors to satisfy any curriculum requirement.

**BUS-493 (Formerly B791) 0-0-(3 or 6)
Business Internship**

A professional internship provides an opportunity for professional experience supporting application and further development of the knowledge gained in the classroom. Under faculty supervision, students work in positions related to the major, minor and/or career goal, develop learning objectives and complete reflective academic assignments. Students should be exposed to a broad spectrum of professional practice, particularly those not available in the academic setting and are expected to make a professional contribution to their employer.

Prerequisites: 2.5 G.P.A., completion of 60 credits, and permission of the Internship director. Additional requirements may apply. See "Internship Program" section for further details.

**CAD-201 (Formerly T122) 2-2-3
Introduction to Digital Imaging**

This course focuses on increasing the student's individual level of computer literacy through the exploration of the basic structure of the operating system, general internet skills and the fundamentals of both raster and vector based software. Course projects provide hands-on experience with Adobe Photoshop and Adobe Illustrator software.

**CAD-204 (Formerly T126) 2-2-3
CAD for Fashion Design**

Computer-aided design is utilized in practically every segment of the fashion industry from concept board development to fabric design, technical drawing, designing and formulating digital presentations. Students learn state-of-the-art CAD software and gain skills utilizing them to prepare a variety of industry-related projects.

Prerequisite: FASHDES-2XX, FASHDRW-207

**CAD-206 (Formerly I342) 1-4-3
CAD I for Industrial Design**

The course introduces students to computer-aided design with a focus on the industrial design processes. In an intuitive fashion, students create and refine designs using a solids-modeling software package. In order to recognize the critical role CAD plays in the development of designs, students will use designs created in design studio courses as the subject matter of the CAD activities. Design-control drawings, three-dimensional rendered drawings and perspective drawings will be the course's output.

**CAD-301 (Formerly T123) 1-5-3
Advanced Digital Imaging for Textile Design**

This course focuses on both the conceptual and technical aspects of digital portfolio presentation for the textile

designer. Course projects provide an in-depth exploration of Adobe Photoshop, Adobe Illustrator, InDesign and Dreamweaver software.

Prerequisites: CAD-201

**CAD-306 (Formerly I621) 1-4-3
CAD II: Digital Design Techniques**

This course will build upon principles introduced in introductory CAD courses. It is primarily a laboratory course in which students will learn to take their early design concepts through to the final presentation using advanced digital design techniques. Students will use multiple digital design software packages across computer platforms with an emphasis on CAD packages such as NURBS modelers and animation software, as well as vector-based, desktop-publishing programs and bitmap-based programs.

Prerequisite: grade of "C" or better in CAD-206 or permission of the instructor

**CAD-401 (Formerly T125) 2-2-3
Apparel CAD/CAM**

A comprehensive course that incorporates software widely used in the apparel industry where patterns are created then graded and made into markers. Industry standards and specifications are followed for each area. Students use software to solve problems and increase productivity.

Prerequisite: FASHDES-213

**CHEM-101 (Formerly L312) 3-2-3
General Chemistry**

(for non-science majors)

This course allows students to pursue further study of chemical issues as they relate to the consumer and to health. Students will become familiar with issues surrounding the use of everyday products such as laundry products, personal-care products, plastics, fibers and food additives. Also included are an introduction to organic chemistry, biochemistry and the chemistry of some health-related issues. Students should complete this course with an awareness of the complexities of the chemical structures in their daily lives and the issues involving their use and abuse, so that they may make more informed decisions.

**CHEM-103 (Formerly L321) 4-0-3
Chemistry I**

(required for Science and Engineering majors)

An introduction to the fundamental laws and theories of chemistry, including the properties of matter, chemical reactions and stoichiometry, energy and thermochemistry, atomic structure and the periodic table. Basic knowledge of algebra, geometry and trigonometry is presumed. Students enrolled in MATH-099 may not take this course. This course is not recommended for students enrolled in WRTG-099 or READ-099 fundamentals courses.

Co-requisite: CHEM-103L

**CHEM-103L (Formerly L321) 0-3-1
Chemistry I Laboratory**

(required for Science and Engineering majors)

This hands-on laboratory-based course highlights concepts covered in Chemistry I Lecture. Emphasis is placed on developing good laboratory and data analysis skills. Experiments include acid/base titrations, heat determination using calorimeters and oxidation/reduction reactions.

Co-requisite: CHEM-103

**CHEM-104 (Formerly C112) 4-0-3
Chemistry II**

(required for science majors)

This course is a continuation of CHEM 103 Chemistry I that provides an introduction to chemical bonding and molecular geometry, property of gases, intermolecular attractions, solutions, kinetics, chemical equilibrium, acids, bases and thermodynamics.

Co-requisite: CHEM-104L

Prerequisites: CHEM-103 and CHEM-103L

**CHEM-104L (Formerly C112) 0-3-1
Chemistry II Laboratory**

(required for science majors)

This hands-on laboratory-based course highlights concepts covered in Chemistry II lectures. Analytical and data interpretation/presentation skills are honed through a series of experiments including aspirin synthesis and determination of vitamin C content.

Co-requisite: CHEM-104L

Prerequisites: CHEM-103 and CHEM-103L

**CHEM-201, CHEM 202 3-0-3, 3-0-3
(Formerly C121, C122)
Organic Chemistry I and II**

A two-semester lecture series in the chemistry of hydrocarbons and their derivatives. Initial topics include the origin of organic chemistry, chemical bonding, the structure and properties of organic compounds and stereochemistry. This is followed by a detailed consideration of the structure, synthesis and reactions of all major families of organic compounds.

Co-requisites: CHEM-201 and CHEM-202L

Prerequisite: CHEM-104 and CHEM 104L

**CHEM-201L, CHEM 202L 0-4-1, 0-4-1
(Formerly C121, C122)
Organic Chemistry I and II Laboratory**

Two semester laboratory companion course to Organic Chemistry lecture. Topics include practical instruction in basic organic chemistry techniques of purification, extraction, chromatography and spectroscopy; followed by representative experiments of the major organic functional groups.

Co-requisites: CHEM-201, CHEM 202

Prerequisites: CHEM-104 and CHEM-104L

**CHEM-206 3-3-4
Forensic Chemistry**

Students will become acquainted with the various sub-disciplines of forensic science with emphasis on the chemical principles used to collect, process, identify, quantify and qualify crime scene/victim evidence. Through lectures and case studies, the scientific foundations for the examination of physical, chemical and biological evidence will be

explored. Laboratory sessions will provide hands on experience with modern forensic techniques used to analyze physical evidence such as blood, glass and fibers. The course will culminate with a mock trial in which students present the results of their analytical investigations to a jury.

Prerequisites: CHEM-104, CHEM-104L, BIO-104, BIO-104L

**CHEM-214 (Formerly C123) 3-0-3
Bioorganic Chemistry**

This course is a one-semester overview of organic chemistry and biochemistry for PA majors and open to those who meet the prerequisites. After introduction to different functional groups, the course provides a systematic study of the biologically important compounds, including amino acids, proteins, nucleic acids, enzymes, carbohydrates and lipids. Emphasis will be placed upon the structure, properties and functions of these compounds. The course will culminate in an overarching discussion of the intricacies of metabolism of some of these biomolecules.

Prerequisites: CHEM-104 and CHEM 104L, grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L

**CHEM-305 (Formerly C131) 3-4-4
Physical Chemistry I**

Fundamental topics in thermodynamics are covered, emphasizing the first three laws of thermodynamics. Applications of these principles and chemical equilibrium to ideal gases, real gases, solutions and solids are discussed. Chemical kinetics is covered in detail. A brief examination of the field of chemical dynamics is included. Where appropriate, current research in these areas will be discussed. The laboratory will emphasize using chemistry techniques such as FTIR, UV-Vis, GC and computational programs to examine fundamental physical processes.

Prerequisites: CHEM-202 and CHEM 202L, PHYS-203 and PHYS-203L, and pre or Co-requisite MATH-213

**CHEM-306 (Formerly C132) 3-4-4
Physical Chemistry II**

Quantum mechanics is the fundamental theory underlying the description of atoms. It details how atoms can interact on the microscopic level. Quantum mechanics will be used to understand the observed spectroscopic properties of atoms and molecules. Statistical mechanics, which connects the macroscopic world of thermodynamics and kinetics with quantum mechanics, will also be covered. The laboratory is a continuation of CHEM-305 with an emphasis on spectroscopy.

Prerequisite: CHEM-305

**CHEM-309 (Formerly C142) 3-3-4
Inorganic Chemistry**

An advanced course in modern inorganic chemistry that covers structure and bonding, symmetry, thermodynamics and mechanisms, along with a systematic discussion of reactions and properties of representative main group and transition metal elements. This course will also illustrate some of the relationships between inorganic chemistry and other areas of chemistry, including biochemistry. The laboratory covers a variety of synthetic techniques and physical and analytical

methodologies that are particularly applicable to inorganic compounds.

Prerequisite: CHEM-306

CHEM-323 (Formerly C193) 3-3-4
Instrumental Methods of Analysis

(writing intensive)

This course provides an overview of the variety of analytical and instrumental methods for quantitative and qualitative chemical analysis. Topics include gravimetric and volumetric analysis; ultraviolet, infrared and visible spectroscopy; gas and liquid chromatography; and mass spectrometry. Laboratory sessions hone students' analytical- and critical-thinking skills. Students are required to work on a group research project and present their findings at a local/regional scientific conference.

Prerequisite: CHEM-202 and CHEM 202L

CHEM-371 (Formerly C199) 3-0-3
Selected Topics in Chemistry

A study of a specialized topic and/or recent developments in one of the fields of chemistry. Sample topics might include theoretical organic chemistry, spectroscopy, photochemistry, stereo-chemistry and computational chemistry.

Prerequisite: CHEM-202 and CHEM 202L

CHEM-391 (Formerly C231) 0-9-3
Research I in Chemistry

Students interested in pursuing independent research in any field of chemistry or biochemistry under faculty supervision must submit a proposal to the academic associate dean of undergraduate programs in the College of Science, Health and the Liberal Arts for approval at least two weeks before pre-registration. The research will include both literature search and experimental work in any current field of chemistry or biochemistry. At the end of the semester, students will be expected to do an oral presentation to the faculty during reading days and prepare a comprehensive written report as mandated by the American Chemical Society.

Prerequisite: permission of academic associate dean for undergraduate programs in the College of Science, Health and the Liberal Arts.

CHEM-392 (Formerly C232) 0-9-3
Research II in Chemistry

Continuation of CHEM-391

CHEM-405 (Formerly C171) 3-0-3
Advanced Organic Chemistry

(writing intensive)

An in-depth study of the factors that affect organic reactions such as solvent, energy, kinetic and steric factors. These are used to examine a variety of reaction mechanisms such as nucleophilic substitution, elimination, aromatic substitution and rearrangement reactions.

Prerequisite: CHEM-202 and CHEM 202L

CHEM-410 (Formerly C172) 3-0-3
Polymer Chemistry

Physical and chemical study of natural and synthetic polymers based on the mechanism of polymer formation,

including such topics as stereochemistry, cationic, anionic and free radical polymerization reactions and the formation of stereospecific polymers by use of heterogeneous catalysts.

Prerequisite: CHEM-405

CHEM-417 (Formerly S431) 3-3-4
Environmental Chemistry

Environmental Chemistry will allow students to develop a general understanding of the role of chemistry and physiochemical concepts in the development, identification and solution of environmental problems. This course will provide the necessary background for conducting chemical analyses on water, air and soil samples. The skills learned in this course will be employed in learning more about the application of chemical principles in solving environmental problems.

Prerequisite: CHEM-104 and CHEM 104L

CHEM-418 (Formerly S443) 3-3-4
Advanced Aquatic and Atmospheric Chemistry

This course will allow students to become familiar with the chemistry of environmental issues confronting humankind. This course will not only expand on CHEM-417, but will emphasize real-world applications. These applications will be handled with the use of thermodynamics, kinetics, acid-base equilibria, redox reactions, complex formation and surface complexation, to name a few. The investigative and problem-solving techniques and the analytical skills learned in this class will be employed throughout the student's lifetime and are presently demanded by industrial, research and remediation firms.

Prerequisites: CHEM-202 and CHEM 202L, CHEM-417

CMGT-101 2-2-3
Construction Graphics

The course is an introduction to the nature and vocabulary of graphical expression used in construction drawings, details and sketches in the architectural, structural, civil, mechanical and electrical engineering disciplines. Students develop an appreciation for the importance of effective graphical documentation and interpret drawings in terms of form, size, distance, quantity and interrelation of elements. Emphasis is placed on effective sketched, verbal and written expression of drawing interpretations to audiences not familiar with construction drawings.

Prerequisites: None, Students not majoring in Construction Management must have permission from the Program Director.

CMGT-102 (Formerly ARCH-427) 3-0-3
Introduction to the Construction Industry

Through analysis of the relevant case studies, this course examines construction management concepts and principles as applied to contemporary practice and investigates the intersecting roles of construction manager, architect, client and general contractor. Topics include planning, programming and documentation from pre-construction to project close-out; legal aspects relative to environmental protection, public and worker safety, contract documents,

insurance and bonds; labor relations and inspection; project control, total quality management and ethics in construction management.

Prerequisites: None.

CMGT-104 (Formerly ARCH-428) 3-0-3
Introduction to the Construction Management

Utilizing pertinent case studies, this course focuses upon the planning and scheduling stages of the building process, with particular emphasis upon reading construction documents and basic estimating principles applied to small-scale, residential and commercial projects. Construction site procedures, as well as techniques for estimating unit quantities and costs of materials, labor and equipment, are introduced and given industry application utilizing building specifications and computer software.

Prerequisites: CMGT-102 (Formerly ARCH-427)

CMGT-200 2-2-3
Construction Project Planning and Scheduling

This course provides a study and application of the tools and concepts used in planning and controlling construction projects. Students employ the Critical Path Method (CPM) of project scheduling, resource leveling and time-cost analysis using manual and computer-based solution methods to develop and maintain working project schedule models.

Prerequisites: CMGT 104 (Formerly ARCH 428) Introduction to Construction Project Management and CMGT 101 Construction Graphics or, permission of the Program Director.

CMGT-202 2-2-3
Construction Cost Estimating and Budgeting

This experiential course familiarizes students with manual and computer aided techniques of contract document quantity surveys, estimated cost calculations and the development and maintenance of purchase and management budgets.

Prerequisites: CMGT-104 (Formerly ARCH-428) and CMGT-101 or permission of the Program Director

COLLST-499 (Formerly L911) 4-0-4
Contemporary Perspectives

(writing intensive)

The capstone seminar of the College Studies program, this writing intensive-course examines the origins and impact of current international trends with an emphasis on the period since World War II. Students also address questions of intercultural understanding at the global, regional and local level. A final research paper requires students to connect these global trends with issues in their profession.

Prerequisites: Humanities I, one course from AREAST-2XX or Foreign Languages and one Junior Seminar. May not be taken CR/NC.

COMM-100 3-0-3
Introduction to Professional Communication

Students in this course learn methods, technologies and vocabulary relevant to the field of professional communication. In a dynamic studio environment, students apply learning as

they practice multiple types of writing and other means of communication integral to contemporary professional communication. Using theory and practice, students will discuss issues that arise from professional communication in various technologies and across cultural contexts.

COMM-105 3-0-3
Design as Communication

Students learn to apply basic principles and elements of design as they relate to communication. Through a study of found examples of visual design and by applying design concepts to their own work, students learn to explain how hierarchy of information, sequence of delivery and juxtaposition of type and image all build toward audience trust and understanding of the visual experience. In addition, students will explore wider implications of considering design as communication.

(Not available to majors from the School of Design and Engineering or the College of Architecture and the Built Environment)

COMM-200 3-0-3
Reading the Visual

(writing intensive)

Students will analyze various visual genres such as comics, graphic novels, movies, advertisements and political cartoons to learn how the visual elements of texts affect understanding. Students will examine the considerations required for communicating in visual media and will produce a multimedia project and a final researched project.

Prerequisite: WRTG-101

COMM-202 3-0-3
Survey of Research Methods

(writing intensive)

Students in this course analyze and design survey instruments, polls, samples and other quantitative and qualitative research methods. Students learn about the ethics of research, especially regarding human subjects. The course includes introduction to electronic resources, print resources, archiving data, mining data, information architecture, database management and ethnography in business and design.

Prerequisite: WRTG-101

COMM-204 3-0-3
Technologies of Communication

Students will consider communication technologies and how and what people communicate using those technologies. Students will also explore how such communication technologies arose and how they affect communicators and the society in which they have become interwoven. Possible topics include the history of writing; the printing press and printmaking; the personal computer and graphic user interfaces; the Internet as communication medium; and the re-appropriating of technologies for communication such as the iPod (e.g., podcasting) and text-messaging.

Prerequisite: WRTG-101

COMM-303 **3-0-3**
Technical Writing
(writing intensive)

Students will learn to write and design documents in a variety of technical genres, including executive summaries, reports, instructions, among others, for technical and professional audiences. The course will usually take place in a discussion or workshop format and will use case studies based on real-world situations. Because technical writing in the workplace is often collaborative, students will often work in teams during class and on the final project.

Prerequisite: COMM-100

COMM-305 **3-0-3**
Multimedia Presentation

Students in this course learn to marry the basics of effective public speaking with visual technology, to allow them to make effective and professional quality presentations. Students will master these technologies and intensively practice speaking in front of an audience. In addition, students will study the standards of professional presentation that benefit different audiences.

Prerequisite: WRTG-101

COMM-307 **3-0-3**
Public Relations and Media Writing
(writing intensive)

Students in this course learn the fundamentals of writing for multiple public audiences in multiple communication formats and genres. Areas addressed include public relations, public affairs, media relations and press releases. Students will also learn to judge the importance of information as well as set priorities and tailor writing to meet the needs of different audiences.

Prerequisites: COMM-100

COMM-400 **3-0-3**
Usability Testing
(writing intensive)

Usability testing is a technique used to measure a document or website's capacity to meet its intended purpose. The process of usability testing gives direct input on how the anticipated audience will use the product and is critical to product development. This course provides an overview of usability tools and techniques, and then focuses on usability testing. Through discussion, reading and practice, students learn the concepts and techniques needed to conduct a usability test.

Prerequisite: COMM-202 and COMM-303

COMM-402 **3-0-3**
Professional Ethics in Communication
(writing intensive)

This course, designed for the senior in professional communication, will focus on important ethical issues facing the profession and its practitioners. The course will not advocate for particular ethical standards, but it will strive to motivate students to critically and analytically think about standards that are germane to their personal and professional lives, to consider reasons why current standards are in place and

to evaluate whether current ethical standards are sufficient, workable and understood by communication professionals.
Prerequisites: COMM-202 and COMM-307

COMM-404 **3-0-3**
Professional Communication Capstone Portfolio Project
(writing intensive)

This course, designed for the senior in professional communication, will focus on integrating his/her college course work through developing a capstone portfolio. By working on a capstone portfolio that draws on prior course work and that culminates in an oral presentation and a written project, students will use their critical thinking skills in synthesizing previous course work to extend and develop their original ideas.

Prerequisites: COMM-307 and COMM-400

DEC-101 **1-5-3**
Integrative Design Process

Design thinking is a shared process and key component of innovation for all fields within the College of Design, Engineering and Commerce. In this course, students will develop and refine abilities to construct, analyze and use the process of designing within an interdisciplinary, team based environment. Integrative Design Process is a part of the DEC core and is a mandatory course for all students in the College of Design, Engineering and Commerce. This course also fulfills the Arts and Cultures requirement of the College Studies Program for students enrolled in the majors in the School of Business Administration.

DIGD-206 (Formerly D323) **1-5-3**
Foundations in Web Design and Strategy

This course will be an exploration into the design process and techniques for creating interactive experiences. This will be first step in learning to think and work as a web designer. We will cover a basic understanding of information architecture, usability, front end programming logic and design literacy. We will also discuss the principles of raster and vector electronic imaging as a means to provide a solid foundation needed to succeed in the interactive design field.

Prerequisite: ADFND-102 or DSGNFND-203 or GRAPH-202 or permission of the Director of the Interactive Design & Media or Graphic Design Communication program.

DIGD-301 (Formerly D511) **0-10-5**
Interactive Design I

This studio explores the principles and strategies involved in designing and producing effective interactive publications. Issues of navigation, digital ergonomics, information architecture, way finding, semiotics, symbolism and electronic publishing will be explored through a series of increasingly difficult and technologically demanding exercises leading toward a longer and more in-depth final project.

Prerequisites: GRAPH-202 or ARCH-202 and admission to the Interactive Design and Media program or permission of the Digital Design program director

DIGD-302 (Formerly D512) 0-10-5
Interactive Design II

This studio introduces students to a variety of media used in interactive design including motion topography for the screen, kinectic type, graphic motion and online video development. Students will be introduced to the basic concepts and strategies needed to integrate this with interactivity. Issues of navigation, information architecture and electronic publishing will be covered. This studio course will include a series of progressively more difficult and technically complex projects leading toward a longer and more in-depth final project.

Prerequisite: DIGD-301

DIGD-305 (Formerly D704) 3-0-3
Theory of Electronic Communication Seminar I
(writing intensive)

This seminar course provides students with a theoretical understanding of the role of the digital designer within the constantly evolving electronic marketplace. Issues of e-commerce, digital communication, electronic ethics and professional practice will be discussed. Special focus will be placed on how our existing culture has been, and is currently being, revolutionized by the information explosion.

Prerequisite: Admission into Interactive Design and Media program

DIGD-307 (Formerly D625) 1-5-3
Advanced Web Design and Strategy

This course exposes students to conceptual and technical aspects of Web design. Information architecture, semiotics, storyboarding and site management are taught; in addition to learning technical skills in Web production software and HTML. Additional areas of focus include typography, color theory, composition and motion graphics for the Web. The final project requires the publication of a Web site that pushes the boundaries of traditional interactive media.

Prerequisite: DIGD-206 or GRAPH 310 or ANIM-202

DIGD-312 (Formerly D628) 1-5-3
Multimedia Design

This course exposes students to the conceptual and technical aspects of designing and creating interactive multimedia experiences. In addition to learning technical skills in multimedia authoring software, students will be encouraged to develop innovative forms of electronic content made possible by CD-ROM media. The final project of the students' choosing will demonstrate their ability to create and develop interactive media in a cross-platform environment.

Prerequisite: DIGD-206 or ANIM-202 or approved equivalent

DIGD-401 (Formerly D711) 0-10-5
Interactive Design III

This studio will explore the translation of three- and four-dimensional concepts of space into two-dimensional screen images, interactivity and animation. Students will be introduced to the theory and practices used in integrating 3D modeling/rendering, motion graphic production and web into a rich interactive environment. The mediums of choreography, filmmaking, architecture, performance art and music

will be discussed as potential sources of inspiration for creating innovative digital spaces and experiences. A series of increasingly complex projects will culminate in a more demanding final project.

Prerequisite: DIGD-302

DIGD-403 (Formerly D714) 3-0-3
Web Development

This course will explore the Web markup languages, HTML, CSS and Java Script, required for advanced control of Web design. Students will be introduced to these languages through lectures, demonstrations and practical exercises. The focus will be on writing, testing and de-bugging the code and its appropriate application. A series of increasingly complex exercises will gradually build the student's knowledge and understanding of these languages.

Prerequisite: DIGD-301 or DIGD-307

DIGD-405 (Formerly D629) 1-5-3
Digital Video Design and Production

This course exposes students to the principles of digital-video design and production. Students will become versed in non-linear, video-editing software as a means to create effective digital-video presentations. A series of projects develop essential skill sets such as storyboarding, video capture, editing and compositing. A final, student-defined project will demonstrate mastery of the conceptual and technical aspects of digital-video design and production.

Prerequisite: DIGD-206 or ANIM-202 or approved equivalent

DIGD-406 (Formerly D715) 3-0-3
Actionscript 3.0

This course will explore the multimedia scripting languages ActionScript and Lingo, required for advanced control of multimedia. Students will be introduced to these languages through lectures, demonstrations and practical exercises. The focus will be on writing, testing and de-bugging the code and its appropriate application. A series of increasingly complex exercises will gradually build the student's knowledge and understanding of these languages.

Prerequisite: DIGD-301

DIGD-415 (Formerly D630) 1-5-3
3D Modeling

This course exposes students to the conceptual and technical aspects of three-dimensional modeling and virtual environments. Students will complete a series of specifically designed exercises of increasing difficulty leading to a final project of the student's choosing. The class will cover the basic principles of 3D modeling and animation including polygonal and NURB modeling, texturing, lighting and animation.

Prerequisite: DIGD-206 or approved equivalent

DIGD-493 0-0-(3 or 6)
Design, Media Internship

A professional internship provides an opportunity for professional experience supporting application and further development of the knowledge gained in the classroom. Under faculty supervision, students work in positions related to the major, minor and/or career goal, develop learning objectives

and complete reflective academic assignments. Students should be exposed to a broad spectrum of professional practice, particularly those not available in the academic setting, and are expected to make a professional contribution to their employer.

Prerequisites: 2.5 G.P.A., completion of 60 credits, and permission of the Internship director. Additional requirements may apply. See "Internship Program" section for further details.

DIGD-498 (Formerly D810) 3-0-3
Interdisciplinary Capstone Project Preparation
(writing intensive)

This course requires students to identify and analyze potential capstone projects through a number of lenses including technical feasibility, marketability and design potential. With faculty guidance, students will form interdisciplinary teams that reflect the specific requirements of the chosen capstone project. To complete this course, a project proposal must be submitted documenting the factors that will allow the development of a successful capstone project. Research and presentation skills are a major focus of this course.

Prerequisites: DIGD-302

DIGD-499 (Formerly D712) 0-10-5
Interactive Design IV Interdisciplinary Capstone Project

This capstone studio will develop the ability of the interactive designer to successfully participate on an interdisciplinary team. Students from a variety of majors, already organized in the capstone preparation course, will collaborate to develop a final, working prototype of a product, service, experience or publication of their choice that synthesizes their knowledge and skills from the previous semesters. The students will develop a project that demonstrates innovation, marketability and relevance within the larger community.

Prerequisites: Grade of "C" or better in DIGD-401 and DIGD-498

DRAW-101 (Formerly T712) 1-5-3
Drawing I

Basic drawing experience to develop the understanding of form as applied to two- and three-dimensional space. The student works from nature, still life and the human figure in a variety of media; exploring qualities of line, texture, light and space representation. Students begin to explore subjects and develop ideas with application to the design majors.

DRAW-201 (Formerly T713) 1-5-3
Drawing II for Graphic Design

Advanced drawing experiences continue the study of form and structure begun in Drawing I. In addition, students are encouraged to develop individual expression in a variety of graphic media. Drawing as a means of developing graphic ideas is stressed.

Prerequisite: DRAW-101

DRAW-206 (Formerly T714) 1-5-3

Drawing II: Figure Drawing

In this course, students acquire special knowledge of the human figure and anatomy. A variety of media and methods of graphic representation are explored. Perceptual skills, as well as cognitive aspects of drawing the human form, will be studied. Live models, both clothed and nude, charts, skeleton model and the self will be used as sources for study.

Required for Fashion Design majors.

Prerequisite: DRAW-101

DRAW-301 (Formerly I633) 1-5-3

Drawing: Design and Development

This is an advanced drawing course developed for designers of all disciplines who want to improve the designer's ability to apply knowledge imparted in other courses to the development of designs. Wherever possible the subject matter of the students' design studio courses will be used as the subject matter for drawing exercises.

Prerequisite: VSDRW-101 and INDD-102

DRAW-303 1-5-3

Advanced Drawing: Materials and Techniques

Advanced Drawing: Materials and Techniques is designed to further develop the design student's drawing abilities and creative thought process, while encouraging conceptual development and a deeper understanding of contemporary issues in art and design. This course will provide an in-depth exploration of line, color and materials using a variety of drawing tools, while introducing a more conceptual approach to drawing. Students will participate in off-campus trips to galleries and museums.

Prerequisite: DRAW-101

DSGN-371 (3-0-3) or (1-5-3)

Special Topics in Design

An upper-level course designed to take advantage of resident/adjunct/visiting faculty members' expertise or a special focus wanted by the School for one or two terms. These courses might provide an in-depth treatment of recent advances in subjects of current interest in a given field whose subject matter is not necessarily needed to be offered long term. A specific "topic" may be delivered a maximum of two terms.

Prerequisites: Announced prior to registration

DSGNFND-103 (Formerly T701) 1-5-3

Design Foundations I

This foundation design course explores the basic elements and principles of 2D and 3D form and their application in the design process. Line, shape, mass, space, texture and gray value are introduced as fundamental and interrelated components necessary in structuring solutions to problems in design. Projects are introduced that encourage students to

express ideas in a visual/tactile context, while exploring the interaction of ideas and materials.

DSGNFND-203 (Formerly T702) 1-5-3
Design Foundations II

Color is introduced in this foundation design course with an emphasis placed on its practical application in the design process. Projects done by students, using a variety of media, will explore the interaction of color in design with formal, bio-physical and psychological implications and goals.

Prerequisite: DSGNFND-103

DSGNFND-303 (Formerly T704) 1-5-3
Design Foundations III

In-depth studies emphasizing the use of color and varied media in both 2D and 3D forms are undertaken in this foundation course. The interrelationship of the elements and principles of design are addressed through solving a variety of visual problems. Processes of abstraction are explored in projects using a wide variety of media. Students will be expected to develop their abilities for critical analysis of their own work, as well as design processes and products in general.

Prerequisite: DSGNFND-203

DSGNFND-423 (Formerly T729) 2-2-3
Design Concepts

Students develop basic design skills and gain confidence to utilize these skills as they relate to apparel design and merchandising. Trend forecasting research and presentation skills are emphasized. Vocabulary and concepts necessary for interaction with the fashion design community and the ability to assess quality design ideas, images and workmanship is critical for success in the buying and retailing of apparel. The course is an introduction and exposure to the process of forecasting and design. May not be taken by design majors.

Prerequisite: FASHMGT-101

ECBIO-101 (Formerly S430) 3-0-3
Environmental Issues

In this course, students will explore the ecological, chemical, social, economic and political implications of critical global environmental issues including water pollution, pesticides, energy, acid rain, global warming, waste management, biodiversity loss and population growth. Alternative solutions proposed to address these experimental issues will be explored from multiple perspectives.

Prerequisite: Science I (SCI-101, BIOL-101, BIOL-103, CHEM-101, PHYS-101)

ECBIO-201 (Formerly S238) 3-0-3
Biodiversity

The purpose of this course is to explore what is known about the abundance and distribution of all species on earth, what threatens and supports these species and what efforts humans have taken both in the United States and globally to destroy and conserve biodiversity. Genetic variability, demographic and population dynamics, environmental variation, economic value and legal status will be compared for the

design of captive breeding programs, protected areas management and sustainable use alternatives.

Prerequisite: Science II (completion of any two of the following courses: SCI-101, SCI-102, BIOL-101, BIOL-103, CHEM-101, CHEM-103, PHYS-101, PHYS-201)

ECBIO-207 (Formerly S461) 2-2-3
Soils

This course examines factors of soil formation and discusses basic physical, chemical, ecological and morphological soil properties that affect soil characteristics in managed and natural landscapes, as well as how important soil classification variables are influenced by these processes. This is an interactive lecture/laboratory course complemented by local field trips with emphasis on soils from pedon-to-landscape as resources for environmental quality.

Prerequisites: grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L

ECBIO-208 (Formerly S462) 2-3-4
Local Flora

An introduction to regional native plants used in landscape architecture and ecological restoration. Characteristics, terminology and keys used in identifying plants and plant families will be taught as well as sight recognition of common species. Other topics include plant growth, development and propagation, optimal habitats and recognition of best management practices. Field work at local/regional sites constitutes a significant part of the course.

Prerequisites: BIOL-101, or grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L

ECBIO-301 (Formerly S233) 3-3-4
Ecology

This course quantitatively measures the relationship between organisms and their environment at the population, community, landscape and global level. Critical ecological controversies will be explored. Field data for both flora and fauna will be collected, analyzed and presented following guidelines from professional scientific journals.

Prerequisite: grade of C- (1.67) or better in BIOL104 and BIOL 104L or grade of C- (1.67) or better in ECBIO 208

ECBIO-302 (Formerly S234) 3-3-4
Experimental Field Ecology

This course focuses on the historical, legal, ethical, economic and scientific foundation of the emerging field of conservation biology. Genetic, ecological and population analytical methods will be applied to case studies of conservation programs from around the world with an emphasis on research design critiques. Experimental design and statistics for field problems will be covered in depth. Students will design, implement, analyze and present their findings from an ecological field experiment.

Prerequisites: grade of "C" or better in ECBIO-301 and co-requisite STAT-301

- ECBIO-316 (Formerly S465) 3-3-4**
Wildlife Ecology and Conservation
 This course is an international overview of current strategies used for wildlife conservation of mammals, birds, fish and other vertebrate species. Population ecology, habitat, disease, foraging and behavior will be covered in depth. Students will research the historical, legal and economic foundation for current best-management practices. Through intensive field studies, students will compare and contrast scientific-field techniques used in wildlife management.
Prerequisite: grade of "C" or better in ECBIO-301
- ECBIO-318 (Formerly S468) 3-0-3**
Urban Ecology, Restoration & Planning
 Natural lands and natural systems occur in densely populated areas and because of the human impacts present vast challenges to the landscape architects and environmental planners who are entrusted with their protection and enhancement. This course studies in detail urban ecological systems and the human impacts that shape them. The student will also be exposed to current restoration techniques, which are being utilized in the urban setting to restore natural ecological functioning to the city.
Prerequisites: SCI-101, or grade of "C-" (1.67) or better in BIOL-104 and BIOL-104L, or permission of instructor
- ECBIO-319 (Formerly S454) 3-0-3**
Oceanography
 An introduction to the biological, chemical, geological and physical aspects of the ocean environment with particular emphasis on the importance of the oceans to human beings and the impact we have on them. Students may participate in an optional field trip highlighting estuarine/coastal biodiversity, aquacultural techniques and oceanographic sampling techniques.
Prerequisite: SCI II which is completion of any two of the following courses: SCI-101, SCI-102, BIOL-101, BIOL-103, CHEM-101, CHEM-103, PHYS-101 or PHYS-201
- ECBIO-391 (Formerly S491) 0-9-3**
Research I in Environmental Science
 Independent research is taken under the guidance of a faculty member. The research will include a written proposal prior to initiation of the project, a literature search, experimental fieldwork, a written abstract and report at the end of the semester and an oral presentation of the work. Guidelines for approval and for final evaluation are available in the College of Science, Health and the Liberal Arts office.
Prerequisite: permission of the academic associate dean of undergraduate programs.
- ECBIO-392 (Formerly S492) 0-9-3**
Research II in Environmental Science
 Continuation of ECBIO-391.
Prerequisites: ECBIO-391, permission of the academic associate dean for undergraduate programs in the College of Science, Health and the Liberal Arts.
- ECBIO-415 (Formerly S455) 3-0-3**
Natural Resource Management
(writing intensive)
 This course explores the existing state of the world's natural resources including forests, fisheries, rangeland, soil, water, wildlife, air and energy. Management options for each resource will be explored in depth. Field trips will compare cost, impact and implementation of different approaches used by environmental agencies. Students will write and present a resource-management plan for a key issue.
Prerequisite: ECBIO-301
- ECON-205 (Formerly E821) 3-0-3**
Macroeconomics
 Introduction to the overall functioning of an economic system with a view toward understanding the factors underlying income, employment and prices on the aggregate level. Topics include monetary and fiscal policy with primary emphasis on the impact of international trade and policy implications.
- ECON-206 (Formerly E822) 3-0-3**
Microeconomics
 Introduction to the principles underlying the behavior of business firms, resource owners and consumers within a system of markets. Introduces the theory of value and distribution and the implications of international trade on autarchy value and distribution.
- ECON-305 (Formerly E843) 3-0-3**
Money, Banking and Monetary Policy
 Banking theory and the impact of the Federal Reserve. Monetary management: current developments and limitations. International aspects are considered.
Prerequisites: ECON-205, ECON-206
- ECON-315 (Formerly E842) 3-0-3**
Intermediate Price Theory
 Analysis of the determination of prices with varying degrees of competition. Determination of wages, rent, interest and profit.
Prerequisites: ECON-205, ECON-206
- ECON-381 (Formerly E899) 0-0-3**
Independent Study in Economics
 Intensive independent study of a chosen subject. The student is expected to read a substantial number of major works in the field and to prepare a critical, documented paper. See also the statement on Independent Study under "Academic Policies."
Prerequisites: permission required. See appropriate form available online at University Registrar's webpage www.philau.edu/registrar/ for more information.
- ECON-401 (Formerly E864) 3-0-3**
International Economics
 The theoretical basis for international trade is examined, as well as the economic impact of such trade on participating nations.

- ENGR-101** **3-2-3**
Introduction to Engineering
 This course is an introduction to engineering through hands on use of design, build and test modules in mechanical, industrial and architectural fields. The course helps the students to relate basic sciences to engineering applications. The course makes an introduction to programming logic, engineering design, materials, workshop skills, engineering ethics and technical presentation. Visits to engineering industries and professional society meetings will be arranged.
Prerequisites: None
- ENGR-102** **2-2-3**
Engineering Drawing
 This course introduces students to engineering drawing, descriptive geometry, design and problem solving. Engineering drawing is a graphic language that can convey, with exactness and detail, ideas from the design engineer to the fabricator. Thus, the emphasis of the course is on communicating design ideas through engineering drawings.
Prerequisites: MATH-102 or MATH-111
- ENGR-104** **3-0-3**
Introduction to Computing
 An introductory course which provides a coherent and comprehensive treatment of fundamental concepts of computer science. It describes how computing systems work and how they are applied to solve real-world problems. The main emphasis is on the design of algorithms and procedural abstraction. High-level, language-programming projects.
- ENGR-210** **3-0-3**
Introduction to Materials Science
 Atomic theory and molecular bonding of solids, polymer structure and mechanics of materials for textiles are taught at an introductory level. Specific processing issues including additives, viscosity, transitions and morphology are studied as well.
Prerequisites: MATH-111, CHEM 103 and CHEM 103L
- ENGR-215** **3-0-3**
Engineering Statics
 Engineering statics describes the mechanical behavior of materials and systems in equilibrium using Newton's laws of motion. In this course, students will learn the principles of force equilibrium, how to construct free-body diagrams, understanding distributed forces, friction and introductory structural response.
Prerequisites: PHYS-201 and PHYS 201L, MATH-213 (pre- or co-requisite)
- ENGR-217 (also listed as MIS-302)** **3-0-3**
Information Systems Design
 Analysis and design of computer-based information systems. Definition of databases, measures of effectiveness, management-staff interfaces. Focus on analyzing the situation and its particular needs before attempting a solution. Case studies from engineering, manufacturing and service environments used to create discussions. (*ISE majors can take this course in the School of Business Administration as MIS-302*)
Prerequisites: MATH-112
- ENGR-218** **3-0-3**
Engineering Dynamics
 Engineering dynamics describes the motions of particles and rigid bodies and the forces that accompany or cause those motions. Basic methods include Newton's laws, the work and energy principle, and the impulse and momentum principle.
Prerequisites: ENGR-215, MATH-225 (pre- or co-requisite)
- ENGR-301** **3-0-3**
Mechanics of Materials
 This course focuses on internal forces; stress, strain and their relations; stresses and deformations in axially loaded members; stresses and deformations in torsionally loaded members; stresses and deformations in flexural members; combined stresses; column analysis; statically indeterminate members; and an introduction to member design.
Prerequisite: ENGR-215
- ENGR-302** **3-0-3**
Design for Manufacturability
 This course focuses on the design process; interaction of materials, processes and design; economic considerations; design considerations for machining, casting, forging, extrusion, forming, powder metallurgy; designing with plastics; design for assembly; and projects and case studies.
Prerequisite: ENGR-102
- ENGR-303** **3-0-3**
Engineering Economics
 This course is designed to provide the engineering student with the decision-making skills necessary to evaluate the monetary consequences of the products, processes and projects that engineers design. Decisions must balance economics, performance, aesthetics and resources. As the capital outlays may be significant and affect the productive potential of a firm over the long term, it is important to understand the time value of money. The course emphasizes calculations of present values, future worth, internal rates of return and replacement analysis. In addition to the specific financial concepts covered, the student will construct computer spreadsheets to do sensitivity analysis and generate graphs to enhance presentation skills.
Prerequisite: ENGR-305
- ENGR-304** **3-0-3**
Operations Research I
 This course addresses the philosophy and techniques of operations research. Emphasis is placed on elementary model building and concepts of optimization; structure of problem solving; linear programming, transportation and assignment algorithms; game theory; network analysis, branch and bound theory.
Prerequisite: MATH-112, ENGR-305

ENGR-305 3-0-3**Engineering Statistics I**

This course addresses the fundamentals of probability and distribution theory with application to various branches of engineering; basic probability theory, discrete random variables, continuous random variables, independent random variables, covariance and correlation and linear combinations of random variables. Statistical decision theory including significance testing and estimation, confidence intervals, design and perform tests of hypotheses on population means, standard deviations and proportions.

Prerequisite: grade of "C" or better in MATH-112

ENGR-307 3-0-3**Engineering Statistics II**

This course is a continuation of EN505 Engineering Statistics, and it is required for the BSISE and the BSE with minor in ISE. It focuses on the application of statistical techniques to industrial problems; relationships between experimental measurements using regression and correlation theory and analysis of variance models; design of experiments with one and more than one levels; emphasis on inherent variability of production processes; control chart techniques and the use of exponential and Weibull models in reliability analysis; and statistical process control.

Prerequisite: ENGR-305

ENGR-308 3-2-3**Integrated Engineering Product Development I**

The IEPD two-course sequence combines the perspectives of design, engineering and marketing in the product development process in a hands-on, collaborative environment. Throughout the course students will be working in groups to design, develop, prototype and analyze economic and marketing aspects of engineered products. Students will be prepared to use modern engineering tools including rapid prototyping, CNC machine tools, CAD-based product life-cycle analysis and management, costing and market data analysis.

Prerequisite: MATH-112, ENGR-104 and ENGR-102

ENGR-309 3-2-3**Integrated Engineering Product Development II**

In the second semester of the IEPD course students will be primarily working on their group projects. Opportunities to work on industry sponsored projects or internally developed projects of current interest will be provided. Periodically students will present their progress on the project in discussion forums. The use of engineering drawings, charts and graphs, simulations and media will be encouraged and evaluated. Industry veterans will provide guest lectures in manufacturing practices, standards, regulations, ethics and management. Through a series of guest lectures, students will also develop an appreciation for patents and intellectual property.

Prerequisite: ENGR-308

ENGR-311 3-0-3**Fluid Mechanics**

This course explores the fundamentals of fluid mechanics, including such topics as fluid statics, control-volume

analysis, the Navier-Stokes equations, similitude, viscous, inviscid and turbulent flows and boundary layers.

Prerequisite: ENGR-218, PHYS-203 and PHYS-203L

ENGR-314 3-0-3**Numerical Methods for Engineers**

Numerical methods are used to solve mathematical problems that are often impossible to solve analytically. Numerical methods enable formulating engineering problems so that they can be solved by arithmetic operations. Problems with large systems of equations, nonlinearities and complicated geometries that are encountered in engineering can be solved by the use of numerical methods and programming using computers. The emphasis of this course is the use of personal computers to solve mathematical problems.

Prerequisite: MATH-225 and ENGR-104

ENGR-316 2-2-3**Introduction and Materials for Composites**

An overall introduction to composites will be presented including their mechanical properties and advantages. Fiber reinforcements will include prepregs and textile composites. Composites design and various molding techniques will be covered. The laboratory will have various manufacturing and experimental exercises.

Prerequisite: ENGR-301

ENGR-322 3-0-3**Fundamentals of Electrical Engineering I**

This course explores the analysis of circuits; transient and steady state phenomena; and general analysis techniques; and the fundamentals of direct and alternating circuits, transformers rotating machinery, electrical and electronic control, and electrical energy.

Prerequisite: PHYS-203 and PHYS-203L

ENGR-371 (3-0-3) or (1-5-3)**Special Topics in Engineering**

An upper-level course designed to take advantage of resident/adjunct/visiting faculty members' expertise or a special focus wanted by the School for one or two terms. These courses might provide an in-depth treatment of recent advances in subjects of current interest in a given field whose subject matter is not necessarily needed to be offered long term. A specific "topic" may be delivered a maximum of two terms.

Prerequisites: Announced prior to registration

ENGR-381, ENGR-382 **0-0-3**
Independent Study in Engineering I and II

For details, see description of Independent Study in Academic Policies section. Admission into one of the following programs: BSE, ME, AE or ISE.

Permission required. Also see appropriate form online at the University Registrar's webpage www.philau.edu/registrar/ for more information.

ENGR-498 **2-2-3**
Senior Design Project I

This course exposes the students to a series of real-world industry problems that require applications of Industrial Engineering principles. A preliminary analysis of various selected problems will be performed collectively. The students will then form a team and select their senior design project. The course also covers (through invited speakers) topics related to the engineering profession such as ethics, intellectual property, project management and social responsibility. Students will present a written and oral proposal of their senior design project preparation.

Prerequisite: IENGR-315, at least 86 credits, and WRTG-21X

ENGR-499 **1-5-4**
Senior Design Project II: Engineering, Architectural Engineering, Industrial Systems Engineering, Mechanical Engineering

(writing intensive)

Students in this course will apply engineering principles to solve a real-world problem. Student works as member of a team assigned to a problem in a manufacturing, processing, service or government organization. The capstone senior design project will consist of a project that builds on engineering, business, ethics and social issues. This course requires a professional written and oral report and will serve as the program's major writing intensive course.

Prerequisites: Completion of at least 90 credits, senior level and WRTG-21X (This capstone course is major specific); ENGR-498 ISE only

FASHDES-211 (Formerly T918) **1-5-3**
Garment Structures

This is the initial course in the fashion design technical studio sequence. Students also produce a sample book of various construction methods. From existing patterns, students produce garments and have the opportunity to redesign them through imaginative use of construction details.

Note: A minimum grade of "C" will be required in order to continue in the design studio sequence. Admission into the Fashion Design Program. Fashion Industry majors need approval from FIM program director.

FASHDES-213 (Formerly T920) **1-5-3**
Pattern Development I

This course covers the fundamentals of the flat-pattern method. Students will draft bodice, sleeve and skirt blocks to be used in creating various styles. Some patterns are cut and sewn in muslin to test fit and further enhance sewing skills. A sample book of flat-pattern techniques will be

produced. In addition, two ensembles will be designed and produced.

Prerequisites: a grade of "C" or better in FASHDES-211.

Admission to the Fashion Design Program. Fashion Industry Management majors need approval from FIM program director.

FASHDES-2XX **1-5-3**
Fashion Design Research

This course focuses on methods of research and development of concepts. The development of visual sensitivity to the environment as a source for building observational skills, design literacy, documentation and concept development skills will be covered. Visits to design resources such as museums, architectural sites, analysis of trend forecasts and current influences will provide inspiration for development of a designer's journal for later application in future major-specific assignments. (First offered Fall 2012)

Prerequisites: VSDES-101, DRAW-206

FASHDES-250 (Formerly T940) **0-0-3**
Fashion Studies Abroad

A "short course" that will enable students to study various aspects of fashion design, production and merchandising in a major region of the world. Through a series of lectures, guided tours and visits to couture and ready-to-wear establishments, design studios, retailers, production plants and museums, students will have the opportunity to experience a segment of the global fashion industry. Students will carry a journal and write about their own experiences abroad. A visual record of design inspirations will be required as part of the research assignments. Oral and written reports, including visuals, will explore the design and business practices of apparel firms. Students will also experience cooperative design and merchandising as a result of team assignments.

Prerequisites: student must have a 2.5 G.P.A. and major in Fashion Design, Fashion Merchandising, Fashion Industry Management or Textile Design program. Student status will be determined by the program offered.

FASHDES-300 **2-4-3**
Technical Design

This course will enable the student through hands on experience to understand the basic requirements needed to be successful in the area of technical design. Building on their knowledge of pattern, construction and design, students will learn to create technical specifications packages used for product data management. Students will further acquire an advanced understanding of terminology and technical vocabulary needed to communicate with manufacturing facilities throughout the world. Students will learn the process of developing garment specifications, conducting fittings and successful communication for quality assurance issues to vendors and manufacturing personnel worldwide.

Prerequisites: CAD-204, a grade of "C" or better in FASHDES-311.

- FASHDES-311 (Formerly T921) 1-5-3**
Pattern Development II
 Students learn to drape basic bodice and skirt variations on standard industrial dress forms. Original garments are designed, draped and sewn using industrial machinery. Accurate patternmaking, sewing and attention to design fundamentals are stressed throughout the course.
Prerequisites: a grade of "C" or better in FASHDES-213. Admission into the Fashion Design Program. Fashion Industry Management majors need approval from FIM program director.
- FASHDES-316 (Formerly T720) 2-4-3**
Fashion Design
 This course serves as an introduction to the key role played by fashion designers in the apparel industry. Students are exposed to the methods of research, development and illustration of original designs. This provides opportunities for the aesthetic and technical examination of designs and the importance of appropriate material choices. This course considers current market trends and design concepts as influences on merchandising. CAD skills are utilized in a variety of presentation aspects.
Prerequisites: CAD-204, FASHDES 2XX FASHDRW-207
- FASHDES-317 1-5-3**
Hand Knitting for Fashion Design
 This elective course is offered to expand construction skills and design possibilities. By hand knitting and/or crocheting, students will design and produce marketable garments to augment other collections or as individual pieces.
Prerequisites: FASHDES-311 Draping Design and Construction; TEXT-101 Survey of the Textile Industry
- FASHDES-322 (Formerly T291) 2-2-3**
Fashion Design Problem Solving
 This course focuses on experimental design and is a continuation of the foundation design sequence for Fashion Design majors. Students are provided the opportunity to think creatively, to develop alternate approaches in problem solving and to select optimum solutions on a cost/aesthetic/materials basis. Through materials investigation, this course promotes the use of creative answers to the basic design problem of covering the body.
Prerequisites: FASHDES-2XX, FASHDRW-207, FASHDES-311
- FASHDES-335 (Formerly T923) 1-5-3**
Pattern Development III
 Students will manipulate basic blocks to develop original designs for various markets. Emphasis will be placed on industry standards as they apply to fit and proper construction techniques. One original design will include using a two-way stretch fabric.
Prerequisites: "C" or better in FASHDES-311. Admission to the Fashion Design program. Fashion Industry Management majors need approval from FIM program director.
- FASDES-336 1-5-3**
Costume Design: Film and Stage
 A studio course that offers fashion designers an opportunity to learn the basic process of costume design through the research, development and construction of an original costume design. Character and script analysis will be covered in addition to working effectively with directors and other collaborators. This course explores researching period costumes and uses appropriate construction techniques while considering comfort and durability for a modern theatre or film production.
Prerequisite: FASHDES-311, FASHDRW-207, ARTH-314
- FASHDES-337 (Formerly T922) 1-5-3**
Tailoring
 Students are introduced to tailoring techniques. Patterns for a tailored garment are drafted according to the industry's standard sample sizes. Construction of garments on industrial machinery uses current production technology.
Prerequisite: FASHDES-311
- FASHDES-371 (Formerly T939) 1-5-3**
Special Topics in Fashion
 A topic of special interest to fashion students and faculty will be explored in a studio/lecture format. Topic will vary, to be chosen by the instructor.
Prerequisite: will be determined by the subject of the course offered
- FASHDES-415 (Formerly T925) 1-7-4**
Collection Development I
 A capstone course for senior fashion designers to develop and produce a portfolio of original designs. The collection is designed, merchandised and produced by the student in collaboration with the instructor and a visiting critic.
Prerequisites: FASHDES-322, FASHDES-316, grade of "C" or better in FASHDES-311 and FASHDES-335. Admission into the Fashion Design Program. Fashion Industry Management majors need approval from FIM program director.
- FASHDES-416 (Formerly T926) 1-7-4**
Collection Development II
 Students will further develop the concepts from their original sources of inspiration from FASHDES-415, Collection Development I, creating a cohesive collection of clothing. This is also an opportunity for the student who wishes to investigate designing for a different market from a new inspirational source.
Prerequisite: a grade of "C" or better in FASHDES-335 and FASHDES-415
- FASHDES-419 (Formerly T725) 1-5-3**
Accessories
 The area of accessories presents excellent opportunities for the creative designer. The accessories market (hats, scarves, belts, handbags and jewelry) is growing and is in need of creative and qualified talent. "Accessories" is an elective for the student interested in pursuing a career in this market and/

or for the student who, as a designer, is interested in the creation and coordination of the total ensemble.

Prerequisites: FASHDES-2XX, FASHDES-211

FASHDES-433 (Formerly T722) 1-5-3

Fashion Layout and Portfolio Development

This elective course provides fashion design students with a professional portfolio of original work showcasing their design abilities and illustration finesse. The concept of layout and design will be presented as it relates to newspaper advertisements, editorial illustration and brochure development. Various presentational techniques will also be addressed as an effective sales tool for seasonal collections.

Prerequisite: FASHDRW-207

FASHDES-441 (Formerly T924) 1-5-3

Couture Techniques

This elective teaches the various methods of creating and constructing a couture garment. Students will learn how to combine custom designing, flat pattern and draping, machine and hand skills to execute an ensemble of clothing in the style of selected couture designers.

Prerequisites: FASHDRW-207, FASHDES-311

FASHDRW-207 (Formerly T715) 1-5-3

Fashion/Figure Drawing

Students review basic forms of the figure in an anatomical, gestural and design sense. In a studio setting, students develop the skills and vocabulary of design room and presentation sketching by drawing from live models, developing designer croquis and technical drawings, exploring various media and rendering fabrics.

Prerequisite: DRAW-206

FASHDRW-317 (Formerly T716) 1-5-3

Fashion Illustration I

An elective for students who are interested in further developing their illustration skills and their applications in the field of fashion design. Students do extensive fashion model studies and develop several visual presentations related to concepts and techniques presented in class. Presentation techniques and portfolio presentation will also be addressed.

Prerequisite: FASHDRW-207

FASHDRW-319 (Formerly T721) 1-5-3

Fashion Illustration II

This sequel to FASHDRW-317 is an elective course designed to challenge and refine the fashion design student's illustration skills as they relate to the professional job market. Extensive fashion-model studies will be combined with assignments similar to those found in today's industry. Professional presentation skills and portfolio development will be emphasized.

Prerequisite: FASHDRW-317

FASHMGT-101 (Formerly T901) 3-1-3

Survey of the Global Products

Survey of the apparel industry presents a comprehensive overview of one of the most dynamic industries in the world including marketing strategies, product-line development, pre-production and production processes, quality assurance,

international sourcing, supply chain management and distribution strategies. This course investigates the application of technology in all areas of the operations of an apparel enterprise. Survey establishes the basis for further study of the apparel industry. The term project, which simulates the formation and operation of an apparel enterprise, provides a theoretical as well as a practical learning experience.

Prerequisite: TEXT-101

FASHMGT-201 (Formerly T917) 1-5-3
Prototyping

Students will have a basic understanding of garment construction combined with flat-pattern concepts. The use of industrial equipment and basic slopers will be utilized to produce a sample book of construction details and garments. Students will also create a pattern and construct a non-apparel item (ex. handbag).

Any student who has received credit for FASHDES-211 or FASHDES-213 may not take this course.

FASHMGT-305N (Formerly FASHMGT-305, T904) 3-2-3
Production

Basic operations in all segments of an apparel plant are studied from the initial receipt of raw materials through storage, inspection, marker making, spreading, cutting, sewing, pressing, warehousing, shipping and customer returns. Latest technological advances in each of these areas will be discussed with marker making performed on a Gerber Accumark 300 System. Inventory management, labor issues, ergonomics and relevant public policies are also studied.

Prerequisites: FASHMGT-101, FASHMGT-201 or FASHDES-211

FASHMGT-308 3-0-3
Global Product Management

Global Product Management is a combination of classroom lectures and experiential instruction in a global environment. Students' tour design houses, mills, dye houses and production facilities, and examine international retailers. Students learn how to assess manufacturers for compliance and engage in cultural activities. Another major component of the course is to observe the economic state of the apparel industry in the specified country and study sustainable methods for manufacturing apparel, home textiles and other products.

Prerequisite: TEXT 101 Survey of Textiles or with the necessary approval from a Program Director

FASHMGT-401 (Formerly T916) 3-0-3
Apparel/Textile Quality Assurance

This course will develop an understanding of the intricate interdependence of fiber content, yarn properties, fabric structure and the applied finish required to produce saleable products offered at a "fair" value per dollar expenditure. Apparel Quality Assurance integrates the knowledge gained in textile, apparel, business and humanities courses to develop managerial talent in any "cut and sew" aspect of the fashion industry.

Fall only.

Prerequisites: TEXT-301, FASHMGT-305 and STAT-201

FASHMGT-408 (Formerly T912) 3-0-3
Apparel/Textile Sourcing
 (writing intensive)

Execution and delivery of a product in today's apparel supply chain occurs within a global environment. Understanding the complexities in establishing and maintaining sourcing strategies is a critical element in a student's portfolio of course work.

Prerequisite: FASHMGT-101 or FASHDES-316 and at least 21 credits in the student's major.

FASHMGT-437 (Formerly TEXT 437) 3-0-3
Integrated Technology

The course will analyze the various manufacturing technologies and their implications on management philosophy, employee relations and profitability through lectures and literature searches. The student will be a member of a team that will analyze and present to top management a feasible plan for integrating manufacturing technology.

Prerequisites: FASHMGT-305

FASHMGT-451 (Formerly T197) 3-0-3
Supply Chain/Operations Management

This course covers the fundamental concepts of the textile and apparel supply chain management in a global context. The course includes topics of inventory management, network locations, supply chain integration, collaboration and information sharing in the supply chain, strategic alliances, international issues in supply chain management and the role of e-business. Emphasis is on the analysis of textile/apparel industries that are leaders in the market by excelling in the integration of their supply chain. The students will apply these concepts in a final project using supply chain management software (EXACT software-existing-and or LOGWARE software-provided with the text book) to analyze the supply chain of a textile or apparel company such as VF Corporation, Benetton, Nike, Li & Fung, Zara Corporation, or others.

Spring only

Prerequisites: STAT-201

FASHMGT-499 (Formerly T909) 3-0-3
Apparel Merchandising Management
 (writing intensive)

Management of the merchandising function in an apparel company, including the development of a product line, design coordination, costing, sample making, specifications, resource selection, forecasting sales and planning inventory levels, promotion and coordination with sales and production are included.

Prerequisite: WRTG-21X, FASHMGT-101 or FASHDES-316 and completion of 90 credits with at least 21 credits in either the Apparel or Fashion core courses, or permission of the instructor

FINC-301 (Formerly B642) 3-0-3
Financial Management

This course provides an introduction to finance that examines the role of the financial decision maker at the corporate level. Four basic questions are examined: the goal of the

firm, investment decisions of the firm, financing decisions of the firm and dividend decisions of the firm. The technique of discounted cash-flow analysis is developed and emphasized as it relates to corporate financial decisions.

Prerequisites: ACCT-101 and STAT-201 or MATH-101

FINC-303 (Formerly B643) 3-0-3
Intermediate Financial Management

An in-depth study of financial analysis and planning, asset management and capital structures. Financial decision making is studied by means of finance cases. Computerized financial analyses are part of the course.

Prerequisites: INFO-101, FINC-301

FINC-313 (Formerly B633) 3-0-3
Financial E-Commerce

This course focuses on electronic payments between businesses and between businesses and consumers. Topics include acceptance of electronic payment, security of electronic payment transfer, ensuring transaction integrity (detecting and correcting violation of electronic payment instructions — also referred to as "secure electronic transaction protocol"), exchange-rate calculations for foreign currencies and integrated Internet versus non-Internet payment systems.

Prerequisite: FINC-301

FINC-318 (Formerly B645) 3-0-3
International Finance and Development

This is an advanced course that explores the interrelations between the economic theory of growth/development and financial applications in the emerging countries.

Prerequisites: FINC-301, ECON-205, ECON-206

FINC-321 (Formerly B661) 3-0-3
Investments and Portfolio Management

This course explores the process of comparative security valuation analysis. The emphasis is on risk-return trade-off, principles of portfolio management and the process of security analysis.

Prerequisite: FINC-301

FINC-322 (Formerly B641) 3-0-3
Capital Markets and Financial Institutions

This course explores depository and non-depository financial intermediaries, flow of funds into the money and capital markets.

Prerequisite: FINC-301

FINC-333 (Formerly B662) 3-0-3
Public Finance

This course explores sources of public funds, taxation and the debt. Uses of public funds, budgets and the control of government expenditures.

Prerequisites: FINC-301, ECON-205, ECON-206

FINC-381 (Formerly B699) 0-0-3
Independent Study in Finance

This course is an intensive independent study of a chosen subject. The student is expected to read a substantial

number of major works in the field, may be required to do primary research and must prepare a critical documented paper.

Prerequisites: permission required, see appropriate form online at University Registrar's webpage <http://www.philau.edu/registrar/> for more information.

FINC-411 (Formerly B663)

3-0-3

Finance Seminar

In a seminar setting, drawing on the knowledge of the fundamentals and advanced concepts studied in finance classes, students in this course will develop skills to become a better decision maker by learning how to integrate the various topics of finance. Through problem-oriented exercises, students will develop an appreciation of the importance and know-how of anticipating, recognizing and adapting to external forces in the decision-making process and organization. Finance as a functional area is dynamic, and emphasis will be placed on incorporating the most recent academic and practitioner literature, which is of theoretical and practical importance in the decision-making process. This challenging course is built around readings, finance cases, research papers and problem sets; and includes group and individual assignments and written and oral presentations.

Prerequisites: senior status, Co-requisites: FINC-322 or ECON-305, FINC-303, FINC-321

World Languages

The offerings for this group seek to promote students' intercultural and international understanding. A student receives College Studies credit for only two offerings within this distribution group. Students may choose World Language courses or study a region and understand its cultures in the Area Studies courses. Students planning to study abroad should consult early with their advisors about how best to prepare in terms of the courses in this category.

Students may take two sequenced World Language courses, or take one course in World Languages and one course in Area Studies, or take two courses in Area Studies. Students must take consecutive levels of the same foreign language to satisfy the World Language requirements; for example, a student cannot take Spanish I and French I.

An exception to the sequencing rule can be given if:

- a student places into a higher-level language course (e.g. German 201) and no course at a more advanced level is routinely offered at the university. In these instances, a student will be allowed to take different language courses at different levels (e.g. German 201 and French 101).
- a student takes a 101-level course and no 201-level course is routinely offered. In these instances, a student will be able to take different language courses at the 101 level (e.g. Chinese 101 and Spanish 101).

Students who are unsure about which level of World Language course they should register for can schedule a diagnostic assessment at the Language and Cultural Center (Search Hall, room 305). If you studied a foreign language in

high school, please use the following guidelines to determine which college-level courses to take:

- No previous study, or one (1) year of a foreign language: 101 course
- Two – four (2-4) years of study: 201 course

There will be an in-class assessment at the beginning of the semester to make sure that students are placed appropriately. The language program reserves the right to decide on students' placement at this stage.

Because the College Studies program serves to broaden a student's global perspective, students who are native speakers of one of the languages presently offered must study a different language or take Area Studies courses to fulfill this category.

Challenge exams in a foreign language can only be taken for those courses presently offered at the University.

Beginning-level language courses are offered in the following:

ARAB-101, ARAB-201 Arabic I and II

CHINE-101, CHINE-201 Chinese I and II

FREN-101, FREN-201 French I and II (Formerly L343, L643)

GER-101, GER-201 German I and II (offered infrequently) (Formerly L345, L645)

ITAL-101, ITAL-201 Italian I and II (Formerly L346, L646)

JAPN-101, JAPN-201 Japanese I and II (Formerly L341, L641)

SPAN-101, SPAN-201 Spanish I and II (Formerly L342, L642)

In the World Language I courses (-101), students learn vocabulary and grammar at the beginning level and study cross-cultural issues so as to interact appropriately in professional and social settings. Courses are taught in the target foreign language and emphasize proficiency in all four communicative skills (reading, writing, listening and speaking). Classroom time is highly interactive and supplemented with visual and audio material and supporting software programs.

Prerequisite: none.

The World Language II courses (-201) are at the advanced-beginner level and are designed to provide students with a deeper understanding of the target language and of the cultures related to it. Students study newspapers and magazines in the target language to learn about current issues in countries where the target foreign language is spoken.

Prerequisite: Grade of "C" or better in (-101) or a minimum of two years of high school language study or permission of the instructor.

Intermediate-level language courses are offered in the following:

JAPN-301, JAPN-401 Japanese III and IV (Formerly L741, L841)

SPAN-301, SPAN-401 Spanish III and IV (Formerly L742, L842)

FREN-301, FREN-401 French III and IV (Formerly L743, L843)

ITAL-301, ITAL-401 Italian III and IV (Formerly L746)

Students learn all four communicative skills (reading, writing, listening and speaking) to an intermediate level and to

continue to learn culturally appropriate behavior in professional or social settings. These courses also use the interactive media programs and information literacy skills of earlier semesters to prepare oral presentations, as well as written and email correspondence with foreign professionals.

Prerequisite: grade of "C" or better in -201 or a minimum of three years of prior high school foreign language study or permission of the instructor.

The Foreign Language IV courses (-401) allow students to develop all four communicative skills (reading, writing, listening and speaking) to an advanced intermediate level and to continue their study of politics, society, economics and intercultural understanding in the countries where the target language are spoken.

Prerequisite: Grade of "C" or better in -301 or a minimum of four years of high school language study or permission of the instructor.

Independent study in a foreign language (HUMN-382) may be offered by individual appointment for students who wish to continue beyond the Foreign Language IV level.

GRAPH-201 (Formerly G311) 0-8-4
Design III for Graphic Design Communication

This course is an introduction to the methods, materials and vocabulary used in the communication design profession.

This studio emphasizes form analysis, visual abstraction, visual metaphor and concepts in design.

Prerequisite: grade of "C" or better in DSGNFND-203 or VSDES-101 or permission of the director of the Graphic Design Communication program

GRAPH-202 (Formerly G312) 0-8-4
Design IV for Graphic Design Communication

This course introduces the student to typography and its uses through sequential studies to support the building of a visual vocabulary. Students will examine the individual letterform, letters in combination and large bodies of text with a concentration on the grid, hierarchy, legibility and clarity of conceptual communication.

Prerequisite: grade of "C" or better in GRAPH-201 or permission of the director of the Graphic Design Communication program

GRAPH-301 (Formerly G511) 0-8-4
Design V for Graphic Design Communication

This course will build on learning objectives and skills acquired in Design IV to advance students' typographic skills. Emphasis will be placed on the complex interplay of visual meaning and form and typographic sensitivity within a historical context.

Prerequisite: grade of "C" or better in GRAPH-202 or permission of the director of the Graphic Design Communication program

GRAPH-302 (Formerly G512) 0-8-4
Design VI for Graphic Design Communication

This course will focus on the understanding and creation of cohesive branding systems through a systems approach to

design with application to such items as a logo, stationery system, packaging, advertisement and other related collateral. The continued investigation of typography and its application will be stressed.

Prerequisite: grade of "C" or better in GRAPH-301

GRAPH-305 (Formerly G641) 1-5-3
Exhibit Design and Signage

This course concentrates on the adaptation of graphic skills to three-dimensional structures and environments. Students will study structures and commercial systems available for product display, exhibit design and signage.

Prerequisite: grade of "C" or better in GRAPH-202 or permission of the director of the Graphic Design Communication program

GRAPH-310 (Formerly G626) 1-5-3
Digital Imaging and Photographic Manipulation

This course will focus on enhancing or manipulating photographic images utilizing the computer. Students may create or import their own images with a scanner or digital camera, and use Photoshop tools and filters to enhance, alter or manipulate the image for artistic or design purposes..

Prerequisite: ARCH-202 or INTD-202 or GRAPH-202 or INDD-202

GRAPH-320 (Formerly G637) 1-5-3
Package Design

This course will allow students to apply graphic knowledge to dimensional structures. Emphasis will be placed on the interplay between graphics and structures and the ability of structural design and materials to enhance conceptual communication.

Prerequisite: grade of "C" or better in GRAPH-202 or permission of the director of the Graphic Design Communication program

GRAPH-341 (Formerly G644) 1-5-3
Illustration

This course includes original image making in a variety of techniques and media, including exploration of both computer design and traditional methods. Emphasis is placed on unity of concept and media and effective use of visual translation and metaphor.

Prerequisite: grade of "C" or better in GRAPH-202 or permission of the director of the Graphic Design Communication program

GRAPH-381 (Formerly G991) 0-0-3
Independent Study

For further details, see general description of Independent Study in "Academic Policies" section.

Prerequisites: GRAPH-301 and permission of the Instructor, advisor, and the Director of the Graphic Design Communication program. See appropriate form online at the University Registrar's webpage www.philau.edu/registrar/ for more information.

GRAPH-401 (Formerly G711) 0-12-6
Design VII for Graphic Design Communication
(writing intensive)

This course will focus on developing design concepts and establishing a visual language that will be applied to various formats while utilizing a systems design approach. The character of the project will support a unified theme/concept/idea for an identified client that is geared to a specific market or interest group. There will also be research and conceptual development work towards a written proposal for faculty review in preparation for the following semester's Capstone in Graphic Design project.

Prerequisite: grade of "C" or better in GRAPH-302

GRAPH-407 (Formerly G631) 1-5-3
Philadelphia University Design Workshop

This course will provide students with an opportunity to work on real projects for real clients (University, non-profit and/or industry), thus offering a chance to gain valuable, practical experience while still in school. Students will work in interdisciplinary teams, gain exposure to client relations and the professional presentation of their work and be exposed to all levels of production as it relates to these projects. The course is open to junior and senior-level Graphic Design Communication and Interactive Design and Media students only upon prior portfolio review by the instructor.

Prerequisite: Grade of C (2.00) or better in GRAPH 301 (for GD students) or DIGD 301 (for DD students). No students will be admitted to the course without prior portfolio review and by permission of the instructor.

GRAPH-408 (Formerly G634) 1-5-3
Advanced Publication Design

This course will focus on publication design and the continued development of projects with increased conceptual and physical complexity. The relationship between editorial content and design format will be explored. Original image-making through illustrative, photographic or any other means will be encouraged. The application of charts, graphs, tables and quantitative information will be investigated.

Prerequisite: grade of "C" or better in GRAPH-202 or permission of the director of the Graphic Design Communication program

GRAPH-409 1-5-3
Issues in Information Design

This course introduces students to issues in the design and communication of typical information categories through a range of design, media, and scales. Topics are raised in the categories of cartography, comparative data and diagrams. Emphasis is placed on exploration, understanding and process.

Prerequisite: GRAPH 202 or INDD 202

GRAPH-499 (Formerly G712) 0-12-6
Capstone in Graphic Design Communication

Students develop projects independently and are required to demonstrate ability and understanding of communication design theory, process and principles. The final project requires research of topic, design exploration, development and final professional presentation. The syllabus also requires the development and presentation of a resume and a

final portfolio of work selected from projects students have produced during their studies in the program.

Prerequisite: grade of "C" or better in GRAPH-401 and faculty approval or permission of the director of the Graphic Design Communication program

GRAPH-XXX. X-X-3
History of Graphic Design
(Writing Intensive)

The History of Graphic Design course will chronicle the evolution of modern graphic design through an in-depth survey of human visual communication throughout history. The course will begin with an investigation of the invention of writing and communication, trace through to the creation of the Gutenberg Press and culminate with the study of the modern, digital age. Discussion will focus on the function of Graphic Design to communicate and meet human need with an emphasis on the influence of technology and the evolving role of design in business. This course would be designated as a Writing Intensive course within the Graphic Design curriculum according to Writing Intensive Course Guidelines.

Prerequisite: ARTH-102

HIST-114 (Formerly L173) 3-0-3
American Transitions

Students will become historians by asking questions about the changes wrought by the transformation of the United States from an agriculturally based, rural society to an urban, industrial and increasingly multi-cultural society in an interdependent world. This course will require students to read, write and speak about issues in the American past. This course may be used to satisfy a College Studies requirement, but not free elective credits.

HIST-381 (Formerly H299) 0-0-3
Independent Study in History

Students will complete an intensive research on a topic in history. This course can be taken for College Studies credit. For further details, see general description of Independent Study in "Academic Policies" section. Permission required, see appropriate form on the University Registrar's webpage <http://www.philau.edu/registrar/> for more information.

HONOR-300 (Formerly U371) 0-0-(3-12)
Honors Study Abroad

This non-credit option allows a student to earn honors credit while completing a semester in another country. Students interested in pursuing Honors Study Abroad work with their academic advisor and/or faculty to prepare a proposal to study/observe a facet of the host country's culture. Upon return to campus, students will offer a presentation of their observations to the campus community.

HONOR-310 0-0-0
Honors Summer Readings

This non-credit option is a very popular option. Exclusively on BlackBoard, students read, discuss and complete assignments of selected books under the guidance of a faculty member. The course counts toward one of the seven courses

required for the honors certificate. To enroll, students must be in good standing in the Honors Program. This is a non-credit option.

HONOR-355 (Formerly U361) 0-0-0
Honors Community Service

Students interested in pursuing Honors Community Service work with the Honors director and/or campus community service coordinator to: 1) identify a local service effort, and 2) prepare a proposal to earn honors credit. This is a non-credit option.

HONOR-381, HONOR-382 0-0-3, 0-0-3
(Formerly U381, U382)

Honors Independent Study I and II

Students interested in pursuing Honors Independent Study should meet with the faculty member with whom they want to study to prepare an outline of the topic, goals and objectives for the semester's work. Proposals should be turned in to the Honors director three weeks before pre-registration. See appropriate form online at the University Registrar's webpage www.philau.edu/registrar/ for more information. *Prerequisites: junior/senior status and in good standing toward completing the Honors Program Scholar certificate.*

HONOR-391, HONOR-392 (Formerly U391, U392) 0-0-3, 0-0-3

Honors Research I and II

Students interested in pursuing Honors Research should meet with the faculty member to plan a research project outlining the topic and inquiry. Proposals should be turned in to the Honors director three weeks before pre-registration. *Prerequisites: junior/senior status and in good standing toward completing the Honors Program Scholar certificate.*

HSCI-100 (Formerly PAS-100) 1-0-1
Introduction to Health Professions

This lecture and seminar course will familiarize the student with the concept, education, certification, legislation and roles of a variety of health care professions. The structure of the U.S. healthcare system, along with ethical and current controversial issues related to that system, will be discussed.

HSCI-230 (Formerly PAS-230) 1-1-2
Introduction to Healthcare

This lecture and seminar course is designed to expose students in pre-health majors to the basic principles of human interaction in the clinical setting. Current issues in healthcare will also be discussed. This course includes 50 hours of required patient contact experience in a healthcare facility.

HSCI-320 (Formerly PAS-320) 0-6-3
Clinical Interactions

This experiential, independent-study course includes an extended community-service volunteer experience (150 hours) in a health care setting. Students are required to complete

and submit activity logs, a final paper and an evaluation from their supervisor.

HSCI-330 (Formerly PAS-330) 3-0-3
Medical Terminology

This course is designed for students in undergraduate health science programs and focuses on the structure and use of medical language and common documentation formats. It also includes an introduction to medical informatics. Clinical cases are utilized to illustrate the use of medical terminology in the health care setting. This course provides a more in-depth examination of this subject than PAS-400.

HUMN-215 (Formerly L383) 3-0-3
Evil and Good

A study of evil and good in art, literature, religion and philosophy, with attention to actual issues of evil and good in human social life. Concepts of evil and good in both Western and non-Western cultures will be surveyed. The course will also provide an introduction to strategies for ethical decision-making.

Prerequisite: WRTG-101, HIST-11X

HUMN-223 (Formerly L382) 3-0-3
World Philosophies

This course takes a comparative approach to the study of philosophy, investigating the nature of philosophical activity in diverse cultures. The central question addressed in the course is: "Is the most reliable knowledge acquired through philosophical reasoning, scientific observation or religious devotion?"

Prerequisite: WRTG-101, HIST-11X

HUMN-225 (Formerly LIT-225 and L381) 3-0-3
Exploring World Literature

In this course, students approach culture as reflected in the worlds created by individual writers in their works. The course emphasizes close reading, critical analysis and frequent writing about assigned readings. This course may be used to satisfy a College Studies requirement.

Prerequisite: WRTG-101, HIST-11X

HUMN-381 (Formerly H399) 0-0-3
Independent Study in the Humanities

In this course, students will complete intensive research on a topic that does not fall within a particular discipline in the humanities or that is interdisciplinary in nature. The course can be taken for College Studies credit. For further details, see general description of Independent Study in "Academic Policies" section. Permission required. See appropriate form online at the University Registrar's webpage www.philau.edu/registrar/ for more information.

HUMN-382 (Formerly L959) 0-0-3
Independent Study in Languages

See the statement on Independent Study in the "Academic Policies" section. Permission required. See appropriate form

online at the University Registrar's webpage www.philau.edu/registrar/ for more information.

IENGR-315 (Formerly EN616) 3-0-3
Operations Research II

The course explores dynamic programming; decision theory involving one stage problem; probabilistic models of operations research; inventory theory; Markov chains; queuing theory and simulation.

Prerequisites: ENGR-304, ENGR-307

IENGR-413 (Formerly EN711) 3-0-3
Simulation Systems

The course explores procedures and rationale for planning, designing and implementing computer simulation experiments used to analyze human-machine systems in engineering, business and social sciences.

Prerequisite: IENGR-315

IENGR-414 (Formerly EN514) 3-0-3
Manufacturing Quality Control

This course covers the methods used for statistical quality control, capability analysis, monitoring and improvement. Students will learn the techniques, as well as the software available (Minitab, Excel and SPSS) required to implement these techniques.

Prerequisite: ENGR-305

IENGR-415 (Formerly EN617) 3-0-3
Production Planning and Control

This course covers several techniques that focus on efficient operations management within any organization. The topics include forecasting, inventory management, production systems – MRP, JIT, CONWIP - aggregated workforce planning, production scheduling and supply chain management. Even though the topics seem to be oriented to the manufacturing industry, the concepts taught in this course are applicable to any type of organization, including service, health care, manufacturing, financial and others.

Prerequisite: ENGR 307, pre or co-requisite ENGR 498

IENGR-418 3-0-3
Systems Engineering

This course focuses on implementation of continuous process improvement within an organization. The purpose of the course is to provide the students with a comprehensive treatment of different tools employed successfully by industries for creating value while eliminating waste (non-value added activities). The course includes lean thinking, value stream mapping, cellular manufacturing, cycle time reduction, Kaisen training, Kanban production systems and Six Sigma.

Prerequisite: IENGR-315, pre or co-requisite IENGR-413; pre or co-requisite ENGR-427; co-register with ENGR-498

IENGR-420 3-0-3
Integrating Business and Engineering

The course is designed to help students understand how business and engineering work together in an organization. This course will cover the fundamental concepts of financial reports, marketing, strategic planning, and product life-cycle

management. The focus of the course is to prepare the engineering students to make decisions related to technology, product and process development, in a way that combines technical, financial, marketing and strategic dimensions. (First offered Spring 2011)

Prerequisite: ENGR 303, IENGR 418

IENGR-426 3-0-3
Supply Chain Modeling and Analysis

This course is a designated elective that can be selected as one of the two required designated electives for the BSISE. The course provides a broad introduction to many critical facets of supply chain. Students in this course will apply industrial engineering tools learned through the curriculum to design, analyze and optimize the supply chain such as, mathematical optimization, inventory management, transportation and network location, facilities planning and material handling. Then, more advanced topics are interrelated such as the value of information sharing in the supply chain, and customer value strategic alliances, international issues and decision support systems.

Prerequisites: IENGR-413, IENGR-415

IENGR-427 (Formerly EN717) 3-0-3
Facility Planning & Material Handling

Physical organization of work places and departments to optimize objectives such as material movement, safety and worker satisfaction. Review of ISE methods for work-place design and productivity measurement and economic decision-making. Computer solutions for layout problems and mathematical models for location problems. Analysis and design of material handling, warehousing and distribution systems.

Prerequisites: ENGR-307; pre or co-requisite ENGR-498

INDD-101 (Formerly I111) 0-8-4
Design I for Industrial Design

This studio is an introduction to design for undergraduate majors in industrial design. The course will provide an intensive introduction to design as an iterative problem-solving process. It will also introduce strategies for making and analyzing form, and present basic techniques of two-dimensional visualization and documentation of three-dimensional objects and principles of design critique, testing and research.

INDD-102 (Formerly I112) 0-8-4
Design II for Industrial Design

This studio introduces methods, materials and vocabulary of the industrial design profession, as well as design as a rational, iterative process of problem solving based on working creatively within constraints. Working with materials, digital and hand tools, shop processes and presentation techniques used by professionals are emphasized. It is intensive in industrial design drawing, including sketches, development drawings, orthographic, axonometric and perspective renderings, as well as beginning drafting as used in industrial design, with dimensioned assembly and parts drawings. *Prerequisite: grade of "C" or better in INDD-101 or ADFND-101 or permission of the director of the Industrial Design program.*

INDD-106 (Formerly I321) 2-4-3
Materials and Process: Fabrication
 This course introduces shop techniques as they pertain to industrial design model-making and prototype construction. All industrial design students must take this course for shop equipment safety training and pass a safety test. Throughout the semester, attention is given to safety precautions for the shop, along with demonstrations of shop equipment and fabrication processes. A major portion of the course will consist of developing an understanding of the materials and machinery commonly used by industrial designers for producing both working and appearance models.

INDD-201 (Formerly I311) 0-8-4
Design III for Industrial Design
 This course focuses on creative problem-solving techniques using drawing, sketch modeling and basic shop skills. Students are exposed to a wide choice of materials, which industrial designers use to move their projects forward. Students will use several media for the purpose of documenting projects in progress, for duplication and for presentation purposes. Emphasis is placed on the improvement of craft in the execution of projects.
Prerequisite: grade of "C" or better in INDD-102

INDD-202 (Formerly I312) 0-8-4
Design IV for Industrial Design
 During the fourth in a series of eight studios, designs are conceived that explore the dynamics between objects and the user's senses and emotions. Students are challenged to improve their ability to define problems, generate concepts, evaluate these and offer refinements of solutions. Students will use basic imaging techniques in the presentation of design solutions.
Prerequisite: grade of "C" or better in INDD-201

INDD-205 (Formerly I351) 1-4-3
Rendering for Industrial Design
 An introduction to the traditional techniques and materials that industrial designers use to develop and represent three-dimensional concepts and ideas. Students become proficient in the use of pencils, markers, pastels and airbrush on a variety of media. Emphasis is placed on understanding the significance of color and graphic applications for industrial design.
Prerequisite: DRAW-201 or permission of the instructor

INDD-207 (Formerly I322) 2-4-3
Materials and Processes: Manufacturing
 This course is concerned with the exploration of materials used in the mass production of products, the processes used to shape these materials and the applicability of these materials to product-design solutions. Students should be prepared to visit a number of manufacturing facilities. A survey of rapid prototyping technologies completes the course.
Prerequisite: grade of "C" or better in INDD-102 or ENGR-102

INDD-210 (Formerly I332) 2-2-3
Ergonomic Studies
 This course analyzes human factors as related to broad aspects of design development. It explores the issues of operator/user human factors and their impact on design. The outcome of this course will be to ascertain the relationship of basic human dimensions on product design. Subjects include systems reliability, sensory and motor processes, basic research techniques and anthropometric studies.
Prerequisite: INDD-106 or permission of the instructor

INDD-301 (Formerly I511) 0-8-4
Design V for Industrial Design
 The fifth in a series of eight studios, this course focuses on ideas of designs derived from an understanding of consumer behavior. Emphasis is placed on user needs, ease of use and product culture, without ignoring the practicalities imposed by manufacturer's markets, manufacturing process constraints and investment concerns. Students will demonstrate control of the process of design to develop meaningful concepts that employ appropriate technology for their eventual realization.
Prerequisite: grade of "C" or better in INDD-202

INDD-302 (Formerly I512) 0-12-6
Design VI for Industrial Design
 In this sixth of a series of eight studio courses, students design and develop consumer products. Students learn about the complexities of the product-development process, during which assembly requirements, marketing issues, materials and component development all affect the initial intent of their designs. Students are required to fabricate a fully functional prototype of their designs. A selected team of professionals from the industry will evaluate the final product.
Prerequisite: grade of "C" or better in INDD-301

INDD-304 (Formerly I532) 3-1-3
Design History/Theory
 This writing intensive seminar will serve as a forum for students to explore the context and scope of the practice of industrial design through readings, research, critical discussions, written presentations and papers. This course is intensive and incorporates a workshop component in which students will use various theoretical frameworks to examine their own attitudes and design work through papers and spoken/graphic presentations.
Prerequisite: INDD-324 or permission of instructor

INDD-324 (Formerly I531) 3-0-3
History of Design and Communication
 This lecture course begins with industrialization and leads to the development of modern design and philosophy. Aspects of industrial design and graphic communication will be critically reviewed. Current design events will be studied

interactively and discussed as a continuation of past design inquiries.

INDD-381 (Formerly I891) 0-0-3
Independent Study in Industrial Design

For further details, see general description of Independent Study in "Academic Policies" section.

Prerequisites: INDD-302 and permission of the instructor. See appropriate form on the University Registrar's webpage www.philau.edu/registrar/ for more information.

INDD-401 (Formerly I711) 0-12-6
Design VII for Industrial Design

The seventh in a sequence of eight studios, this course focuses on the development and expression of design ideas through the knowledgeable assembly of electronic systems and components. The purpose of this course is to familiarize students with technology as it applies to the practice of industrial design. It will focus on technology in three areas: expansion of human ability, augmentation and articulation in industry, and creativity and development enhancement.

Prerequisite: grade of "C" or better in INDD-302

INDD-402 (Formerly I712) 0-12-6
Design VIII for Industrial Design

The last in a sequence of eight studio courses, this course is entirely dedicated to the student's capstone project. It is structured to simulate all aspects of client/designer dynamics, research requirements and project-management issues. Students secure a sponsor from industry or from the industrial design profession, choose the topic of the thesis and present the outcome of their project in a public forum.

Prerequisites: grade of "C" or better in INDD-401 and concurrent enrollment in INDD-494

INDD-493 (Formerly I851) 2-2-3
Professional Practice I

The first in a two-course sequence will address the business, legal and ethical issues in the practice of industrial design. It addresses vital business imperatives in the field of industrial design and such issues impacting on independent consultant design practice and corporate design staff activities. Through research, students begin a personal exploration of the different disciplines embraced by the profession. Students begin networking with the profession to secure and negotiate commitments for their capstone project. This course is writing intensive.

Prerequisites: grade of "C" or better in INDD-302

INDD-494 (Formerly I862) 2-2-3
Professional Practice II

The second in a two-course sequence begins with management concerns related directly to the capstone project. Assignments serve to research project design solutions. The second half of the course focuses on presentation preparations for the capstone project, the integration of the project into the portfolio and the development of this portfolio in

digital media. Students are exposed to various issues related to finding gainful employment.

Prerequisites: grade of "C" or better in INDD-401, INDD-493 and concurrent enrollment in INDD-402

INFO-101 (Formerly B122) 2-2-3
Introduction to Information Systems

The course provides an introduction to the principles of business information processing and the structure and operation of modern digital computers and networks. Included are practical applications and hands-on experience with a word processor, spreadsheets, database, presentation software and World Wide Web authoring software.

INTD-102 0-8-4
Design 2 for Interior Design

This basic foundation course is required in the Interior Design curricula. It is a synthesis of fundamental design principles and an introduction to research as a tool for understanding programming and design. Lectures and demonstrations will utilize the case-study methodology to investigate various design strategies and to chart the historical course of modernism within the context of interior design.

Prerequisite: grade of "C" or better in ADFND-101

INTD-106 (Formerly A123) 1-4-3
Technical Drawing and Graphic Representation

Following one semester of drawing, this course focuses on the fundamentals of creative graphic representation. Specific topics of emphasis include surveying building interiors, the construction of orthographic and paraline projections including floor plans, elevations, sections and one-point and two-point perspectives.

Prerequisite: DRAW-101 and ADFND-101

INTD-201 (Formerly A315) 0-8-4
Design 3 for Interior Design

This studio introduces students to the elements, principles and theories of interior design within the framework of residential design. Students will explore conceptual, theoretical, functional and aesthetic issues, in addition to the organization and interrelationship of residential spaces, elements of enclosure, environmental behavior issues, symbolism and socio-cultural factors. The role of finishes, furniture and equipment (FF&E) in defining a space and the experiential and intuitive nature of the design process will be emphasized.

Prerequisite: INTD-106 and grade of "C" or better in INTD-102

INTD-202 (Formerly A316) 0-8-4
Design 4 for Interior Design

Through structured, diverse, small-scale commercial design projects, this studio introduces students to the conceptual, theoretical, functional and aesthetic issues related to commercial interiors. The craft of making interior spaces, finishes, furniture and equipment (FF&E) in defining a space and the experiential and intuitive nature of the design process will continue to be emphasized. This course uses research,

writing and analysis to explore human behavior in commercial environments.

Prerequisite: grade "C" or better in INTD-201

INTD-206 (Formerly A346) 2-2-3
Interior Building Technology

This course focuses on construction and installation as it specifically relates to interior design. Students will be introduced to the nature and characteristics of interior detailing in relation to interior construction such as architectural woodwork, millwork, partitions, floors, ceilings, stairs, custom cabinetry, furniture and specialty elements. The influence of interior finish materials and textiles on interior form and detailing will be explored. Additional foci include environmental factors, building codes, accessibility requirements, fire safety and materials regulations.

Prerequisite: ARCHDSN-210 and INTD-201

INTD-208 (Formerly A601) 2-2-3
Presentation Techniques

This elective course explores several types of rendering techniques for interior design and architectural spaces. It consists of discussion, demonstration and experimentation with freehand and constructed perspectives, various drawing and rendering media, basic digital rendering techniques and various presentation methods.

Prerequisite: INTD-201

INTD-210 (Formerly A351) 1-4-3
Color: Theory and Practice

This elective studio explores the phenomena and meaning of color, based on appropriate theories of the physical aspects of color using pigment, light and space. Exercises examine what color is, why it is and how we see it. Additional foci include control of color interactions and distinguishing color differences. This course will provide the basis for color choices in a logical and sequential manner and will bridge the gap between theory and use.

Prerequisite: DSGNFND-203 or grade of "C" or better in ADFND-102 or grade "C" or better in INTD-102

INTD-301 (Formerly A515) 0-12-6
Design 5 for Interior Design

This studio focuses on mid-sized commercial and retail interiors. Within the context of a specific program and client, students develop conceptually strong and unique design solutions, integrate issues of technology and construction, and consider special population needs. Students learn to seamlessly integrate appropriate choices in finishes, furniture equipment (FF&E), lighting and basic building technologies in their designs.

Prerequisite: grade of "C" or better in INTD-202 or permission of the program director

INTD-302 (Formerly A516) 0-12-6
Design 6 for Interior Design

This advanced studio emphasizes the resolution of complex design issues in the context of commercial and business interiors. Students analyze a program, ecological and environmental factors, develop a design concept, and proceed with

a completed design that incorporates advanced technological and sustainable design principles. Holistic development of concept, sustainable design solutions, large-scale space planning, materials, construction details, lighting design, building systems, building codes, handicapped accessibility and furnishings is emphasized in the completed design presentation.

Prerequisites: grade of "C" or better in INTD-301, and approval of the instructor or program director

INTD-304 0-1-5
Integrated Community Service

This integrated community service course is required in the Interior Design major. It is an opportunity for students to use and apply their acquired knowledge in a "real world" setting and to work in integrated and collaborative teams. Students will experience the reciprocal nature and responsibility of community service work as fully participating citizens within the greater Philadelphia region.

Prerequisite: grade of "C" or better in INTD-202, or permission of the instructor.

INTD-305 (Formerly A745) 2-2-3
Interior Building Systems

This course will focus on the understanding and application of a broad range of mechanical, electrical, lighting, acoustical, plumbing, HVAC, security and other building systems in the context of interior design. Students will be introduced to the nature and characteristics of fire detection, protection and suppression in building interiors. The critical role of interior building systems in establishing and maintaining the health, safety and welfare of users will be emphasized.

Prerequisites: INTD-206 and INTD-202

INTD-306 1-4-3
Advanced Visualization: Interiors

This course teaches advanced digital three-dimensional modeling, rendering, and animation techniques with a focus on interior environments. Emphasis is placed on accurate and realistic representation of interior spaces, forms, materials, furniture, color and lighting effects, and the creation of virtual walkthroughs. These professional level skills enhance design representations and presentations. Students complete a series of exercises and projects covering a series of advanced digital techniques.

Prerequisites: ARCHDSN-208 Vis I: Digital Modeling, and a grade of "C" or better in INTD-202: Design IV: Interior Design-delete or permission of the program director

INTD-308 (Formerly A625) 1-4-3
CAD 2 for Interior Design

Following CAD Visualization I: Digital Modeling, this required course focuses on two-dimensional design communication and documentation utilizing AutoCAD software for computer-aided drafting. Students will be exposed to AutoCAD commands and techniques, which are most likely to be used in a professional office setting. Students will have an opportunity to produce a set of interior design working drawings and to

further their knowledge of professional interior design construction and specification documents.

Prerequisite: ARCHDSN-208, INTD-206, INTD-202

INTD-310 (Formerly A526) 3-0-3

Textiles and Materials for Interiors and Architecture

This course introduces the role of textiles in the creation of commercial and residential interiors. Key topics include the selection, specification and application of textiles based on their properties and performance criteria; sources of textiles and fabrics; the concept of sustainable resources; appropriate installation methods and maintenance requirements of textiles in interior applications; codes; regulations and standards related to use of textiles in interiors; and estimating material requirements such as carpeting, wallpaper and ceiling finishes.

Prerequisite: INTD-201 or permission of the instructor

INTD-311 (Formerly A616) 2-2-3

Introduction to Set Design

This elective focuses on developing the setting for the action of a play. The set designer develops many of the same skills exercised by architects/interior designers: mastery of design fundamentals, understanding of time and place, knowledge of construction techniques and awareness of how people use space. Steps to creating the stage set will include: careful reading and discussion of selected plays, surveying an existing stage, assisting in the construction of a stage set and attending assigned performances.

Prerequisites: grade of "C" or better in both ARCH-311 and ARCH-312 or LARCH-302, or grade of "C" or better in INTD-302

INTD-325 (Formerly A615) 2-2-3

Furniture Design

This beginning-level elective course is intended to provide students with a basic knowledge of the aspects involved in furniture design. The goal is to expose students to the various means through which one engages in product design. Emphasis is on the fabrication process in addition to prototyping, testing and revision. The course consists of readings, brief lectures, class discussions and studio projects that cover the range of information that designers need to know to be able to specify, design and evaluate furniture-related products for the built environment. A significant amount of class time will be devoted to the development, design and revision of projects.

Prerequisite: grade "C" or better in ARCH-201, INDD-201, LARCH-201 or INTD-201

INTD-401 (Formerly A715) 0-12-6

Design 7 for Interior Design

This studio course explores the full range of contract design. Emphasis is on creating an identity and branding through the development of design concept. The semester-long project provides opportunities to analyze client and program and to design complex three-dimensional interior spaces. Students develop conceptual models, adjacency diagrams, complex space plans and 3-D modeling and construction documents. Concept is further integrated into the design through the

selection and design of materials, furniture and lighting. Industry standards are addressed and integrated along with building code requirements, accessibility requirements and economic and maintenance issues. The semester-long project culminates in a detailed and complex final presentation.

Prerequisite: grade of "C" or better in INTD-302

INTD-412 (Formerly A753) 2-1-2

Interior Professional Practice and Contract Design

In this seminar, the interior design student will analyze the specialized services performed by the professional designer by studying the administrative, legal, ethical and financial aspects of professional practice. Contract documents, specifications, safety standards and building codes will be studied within the context of a non-residential (contract) design project.

Prerequisite: INTD-206 and grade of "C" or better in INTD-302

INTD-428 (Formerly A633) 2-2-3

Restoration/Rehabilitation Interiors

This is an elective lecture/lab course in which students work with period and historic spaces. The course introduces students to theories and techniques of adaptation and preservation of period spaces, preserving their historical integrity. The course will deal with applicable building codes, National Park Service standards of rehabilitation, designing within ADA guidelines and use of appropriate materials and lighting.

Prerequisites: ARCH-211 or LARCH-207; AHIST-305 or LARCH-307; and ARCH-202, LARCH-202 or INTD-202

INTD-487 (Formerly A717) 1-4-3

Capstone Research and Programming for Interior Design

This course gives students the opportunity to assess their inclinations in the field and to select a project that addresses their specific interest. Students are expected to generate individualized research and programming to be used for design and development in their Capstone Project the following semester. They will produce a Capstone Research & Programming Document, which will be the result of research, analysis, and the synthesis of information. It will articulate a clear definition of project parameters and programming. The process of generating this document will recapitulate and augment the research and programming process, which students have been exposed to in previous interior design studios.

Prerequisites: grade of "C" or better in INTD-302

INTD-488 (Formerly A718) 0-12-6

Capstone Project for Interior Design

The interior design Capstone semester provides students with an opportunity to focus on an area of concentration in a design project, which will be independently developed with a designated faculty member. The student must demonstrate aptitude and understanding of architectural and interior design theory, principles, and technology, as well as, overall design competence. The Capstone project includes research in the student's selected problem area, development of the

design concept, detailing and creative presentation of the design investigation.

Prerequisite: grade of "C" or better in INTD-401 and INTD-487

JSINT-3XX 3-0-3

Integrative Professional Seminars

(writing intensive)

Integrative Professional Seminars offer an in-depth examination of specific topics or themes related to the University's professional majors. Geared for a general audience, these courses allow students to explore topics from a variety of perspectives, including those from the disciplines of history, the social sciences and/or the humanities. As advanced writing-intensive courses within the College Studies program, these courses prepare students for senior capstone courses in College Studies and the majors by developing their research, communication and critical-thinking skills. To view current course offerings in this category, go to www.PhilaU.edu/JuniorSeminars.

Prerequisite: WRTG-2XX, SOC-2XX

JSINT-384 (Formerly SOC-317) 3-0-3

Applied Professional Ethics

(writing intensive)

This research and writing-intensive course introduces students to numerous concepts in Western and non-Western ethics that inform decisions about what we "ought" to do in our personal and professional lives. Students will read primary text selections from philosophers and analyze practical cases by applying what they have read.

Prerequisites: WRTG-2XX, SOC-2XX

JSLA-3XX 3-0-3

Liberal Arts Seminars

(writing intensive)

Liberal Arts Seminars offer an in-depth examination of specific topics or themes related to the disciplines of history, the social sciences and/or the humanities. Designed for a general audience, these courses allow students in their junior year build upon the skills and knowledge gained in the introductory College Studies courses in these disciplines. As advanced writing-intensive courses within the College Studies program, these courses prepare students for senior capstone courses in College Studies and the majors by developing their research, communication and critical-thinking skills. To view current course offerings in this category, go to www.PhilaU.edu/JuniorSeminars.

Prerequisite: WRTG-2XX, SOC-2XX

JSLA-360 (Formerly JSLA-350) 3-0-3

Creative Writing: Shaping Narrative and Experience

(writing intensive)

In this hands-on course, students develop their knowledge of how to shape narrative and experience through forms of creative written expression such as poetry and fiction. Students will read and analyze work in these forms; experiment with these forms through writing their own creative drafts and revisions; and develop critiquing skills in a workshop

environment. Students showcase their work in a final portfolio and a reading open to the University community.

Prerequisite: WRTG-2XX, SOC-2XX

JSLA-361 (Formerly LIT-320, L686) 3-0-3

From Fiction to Film

(writing intensive)

The study of the interrelationships between literature and film through case studies of the translation of significant novels (focus on 19th and 20th century) into works of cinema.

Prerequisites: WRTG-2XX, SOC-2XX

JSLA-362 (Formerly LIT-311, L683) 3-0-3

The Artist and Society in Literature and Film

(writing intensive)

An examination of the enigmatic figure of the artist depicted in literature (the short story, the novella and the novel). The genesis and complexity of artists as literary figures will be considered as they find themselves in conflict with society.

Prerequisites: WRTG-2XX, SOC-2XX

JSLA-363 (Formerly LIT-315, L685) 3-0-3

Shakespeare and Popular Culture

(writing intensive)

What role does Shakespeare's writing play in popular culture today? How and why have modern filmmakers, artists and writers "reinterpreted" Shakespeare's plays? Students read and discuss selected plays and examine various film adaptations of them. In addition to comparing different interpretations of Shakespeare's plays to the originals, the course investigates some of the larger issues surrounding Shakespeare and contemporary culture.

Prerequisites: WRTG-2XX, SOC-2XX

JSLA-370 (Formerly HIST-229, L675) 3-0-3

The U.S.: The Recent Past

(writing intensive)

This course focuses on social, cultural, political and economic changes within the United States since 1945. Topics such as beatniks and hippies, the New Left, the civil rights movement, student and anti-war movements, the women's movement, the politics of conservatism and the fate of labor will be studied in the context of an increasingly ethnically and racially diverse society. Students will be encouraged to explore and write from a wide range of sources from across the disciplines.

Prerequisites: WRTG-2XX, SOC-2XX

JSLA-380 (Formerly SOC-312, L664) 3-0-3

Human Rights

(writing intensive)

The course will examine the question of whether there are certain rights that we all possess as human beings and the prominence of these rights in international relations. Students will monitor human-rights violations in the United States and other countries in order to determine how much we have achieved as a world community and how far we have yet to go.

Prerequisites: WRTG-2XX, SOC-2XX

- JSLA-381 (Formerly SOC-325, L684) 3-0-3**
Gender Studies
(writing intensive)
 This course focuses on recent developments in gender studies, examining how gender has been conceptualized and analyzed, historically and in the present day. Topics considered include the formation of masculinities and femininities, the intersections between gender, sexual orientation, class and race, and the significance of gender in personal and professional contexts. Readings are drawn from a variety of disciplines depending on the instructor.
Prerequisites: WRTG-2XX, SOC-2XX
- JSLA-390 (Formerly SOC-321, L673) 3-0-3**
The Urban Experience
(writing intensive)
 This course discusses the origins and development of urban life. Special focus will be upon Philadelphia as it represents trends in the American experience of cities.
Prerequisites: WRTG-2XX, SOC-2XX
- JSLA-391 (Formerly SOC-315, L671) 3-0-3**
The African American Experience
(writing intensive)
 This course explores African Americans' struggle for freedom and equality in American society. It examines the social, economic, political and cultural realms of African American life with some exploration of cultural origins in West Africa. Students read in primary sources and use literary evidence in an interdisciplinary effort to understand the past and explore contemporary issues in American society.
Prerequisites: WRTG-2XX, SOC-2XX
- KNIT-201 (Formerly T551) 4-2-4**
Knit Technology I
 Students will study both weft- and warp-knit fabrics through an investigation of knit construction, machinery, principles and knit fabric analysis. Lectures are complemented with a series of lab exercises on hand-flat equipment and fabric-analysis projects designed to fully acquaint the student with the principles of knit-fabric design and production.
Prerequisite: TEXT-101 or TEXT-104 and Admission to the Textile Design (TEXD.BS.DAY) or Textile Materials Technology (TMT.BS.DAY) Programs or by permission of program director.
- KNIT-203 (Formerly T540) 1-5-3**
Knit Design Studio I
 Students will learn through individual development how to create a range of texture and color effects within knit design. Independent needle selection and the use of the presser foot will be explored within design areas involving Jacquard, held-stitch and tuck-stitch structures. Design ideas will be developed through to swatch/sketch proposals suitable for sweater production.
Prerequisite: KNIT-201 and VSDES-101
- KNIT-205 (Formerly T552) 4-2-4**
Knit Technology II
 A further investigation into the construction, design and production of both weft- and warp-knit fabrics. Lectures will be complemented with lab work involving the design, production and analysis of knit fabrics upon power-knitting equipment.
Prerequisite: KNIT-201
- KNIT-213 (Formerly T541) 1-5-3**
Knit Design Studio II
 A knit design studio elective for Textile or Fashion majors specializing in the knit-design area. Original design ideas will be developed through swatch/sketch presentations. Garment ideas will be developed through technical sketches and specifications into completed sweaters.
Prerequisite: A grade of "C" or better in KNIT-203
- KNIT-307 (Formerly T553) 3-3-4**
Advanced Warp Knitting
 Covers all facets of warp-knitting technology with particular emphasis on the variety of machines and fabric construction in relation to end-use applications and markets. Tricot and raschel warp-knit fabric constructions are made in the knitting laboratory to illustrate the basic warp-knit stitches and lapping motions. A variety of warp-knit fabric samples are analyzed to illustrate basic fabric geometric parameters used in the design and production of warp-knit constructions. Also, students are required to research a unique warp-knit process/product.
Prerequisite: KNIT-201
- KNIT-326 (Formerly T503) 1-5-3**
Advanced Weft Knitting
 An exploration of the principles involved in knit design using CAD systems and electronic-knitting equipment. Students will design, write computer programs and knit their own fabrics on sweater- and jersey-knitting equipment. Fabric constructions such as Jacquard, links-links, cables, pointelle and presser-foot designs will be developed.
Prerequisite: KNIT-203 or permission of the instructor
- KNIT-401 (Formerly T545) 1-5-3**
Introduction to Knit Design
 (for non-Textile Design majors)
 An elective course in which students may explore the development of knit design. Design ideas will be developed on hand equipment through to swatch/sketch proposals suitable for product design. Students can take this course as a single elective and develop design work suitable for inclusion in their portfolio or take further knit-design electives in order to further their skills.
Cannot be taken as a replacement for KNIT-201.
- LARCH-102 (Formerly ADFND-102 for LA Students) 0-8-4**
LA Design 2: Landscape Architecture Foundation
 This foundation design studio is a synthesis of fundamentals of landscape architecture design principles, introduction to programmatic research and an in-depth study of design process, methodologies and craft. All explorations use the landscape as the subject of the studio. Form, texture and spatial

organization are emphasized along with social, psychological and spiritual experiences of place.

Prerequisites: ADFND-101, DRAW-101

LARCH-105 (Formerly EC BIO-301 for LA Students) 2-2-3
Landscape Ecology

Landscape Ecology combines the spatial approach of the landscape architect with the functional approach of the ecologist. As a field it is an integrative and multidisciplinary science that combines geology, botany, zoology and human settlements at the landscape scale. For this course the focus will be on heterogeneous land mosaics, such as neighborhoods, urban areas, whole landscapes, and regions. Students learn the key principles of landscape ecology and then apply them to landscape conservation and the planning and design processes.

Prerequisite: None

LARCH-201 (Formerly LARCH-202) 0-8-4
LA Design 3: Site Design

The focus of this studio is sustainable large-scale planning and design. Students explore land-planning theories, methods and resources used in landscape analyses for sustainable settlement, preservation or management of the land. Natural, cultural and experiential data are integrated into the decision-making and design processes.

Prerequisite: grade of "C" or better in LARCH-102

LARCH-203 (Formerly LA122) 1-4-3
Graphics for Landscape Architecture

In this course, the student gains proficiency in various landscape architecture graphic conventions used in generating, evaluating and presenting design ideas. Included are principles and application of graphic language, color theory, diagramming, plan and section graphics, and oblique and perspective drawings.

Prerequisite: DRAW-101 or permission of the director

LARCH-204 0-8-4
LA Design 4: Regional Landscape Planning

Regional Landscape Planning builds on elements, principles and theories explored in LARCH-102 and LARCH-201, but at the regional scale. Sustainable regional land planning theories, methods and resources used in larger scale landscape analyses for settlement, preservation or management of the land are explored. Natural, cultural and experimental data are integrated into the decision-making and design processes.

Prerequisites: grade of "C" or better in LARCH-201 and LARCH-207

LARCH-206 (Formerly LA332) 3-0-3
History of Landscape Architecture 1

As the second course in a four-term sequence in the history of landscape architecture, this class surveys significant examples of landscape and landscape design from the eastern, central Asian, and western regions of the world, produced from the 8th through the 19th centuries. Students will be introduced to the cultural and social history of each epoch as a means of critically analyzing key historical works

of landscape design and addressing the ideas and concepts imbedded in the term landscape.

Prerequisite: AHIST-205

LARCH-207 (Formerly LA341) 2-2-3
LA Tech: Grading

This course focuses on the principles and techniques of landform manipulation for design and drainage. Students develop an understanding of contours, contour manipulation and site-construction methodologies. Topics include topographic and grading problems in landscape engineering: drainage plans, grading plans, spot elevations, road alignment, sections and profiles, and cut-and-fill calculations.

Prerequisite: LARCH-102 or ADFND-102 or permission of the director

LARCH-301 (Formerly ARCH-301 for LA Students) 0-12-6
LA Design 5: Urban Design I

This design studio focuses on urban design at the site scale. It reinforces design principles learned in earlier semesters, while introducing students to increasing complexity in both program and the design process. The primary philosophic underpinning of the studio is design within a sustainable urban context.

Prerequisite: grade of "C" or better in LARCH-204

LARCH-302 (Formerly LA512) 0-12-6
LA Design 6: Community Design

This studio focuses on community design with the physical environment viewed as a catalyst for community enhancement and revitalization. Issues include community identification, social cohesiveness, social, economic and political factors, the role of open space in urban neighborhoods and community safety and livability. Emphasis is placed on learning methods and techniques for developing physical-design solutions and implementation strategies when working with school, neighborhood and community groups. An important component of the experience is community participation.

Prerequisite: grade of "C" or better in LARCH-204

LARCH-303 2-2-3
LA Tech: Advanced Grading

This Advanced Grading course augments what the students have learned in their first grading course, plus covers in more depth other sustainable aspects of landform manipulation for design and stormwater management. Computer applications will be used as a learning tool. Field trips to sites that are particularly appropriate for observing, measuring and experiencing the sculptural qualities and capabilities of landform are also an integral component of this course.

Prerequisite: LARCH-207

LARCH-305 2-2-3
Plant Community Ecology

This course investigates how interactions within plant species, between species and between species and their environment influences plant community structure. Questions explored include: How many species are in a given habitat type? Why these species and not others? How do they interact with each other plants? What controls their abundances

in natural and urban landscapes? Students will learn how plant distributions are influenced by environmental conditions with a particular emphasis on the urban environs. In-the-field exercises constitute a significant portion of this course.

Prerequisites: LARCH-105 and EC BIO-208

LARCH-306 (Formerly LA550) 3-0-3
Design & Human Behavior

This course provides an introduction to a range of viewpoints, concepts and characteristics of human behavior that should be considered during the design process. Cultural, social and psychological factors are examined. Various theories and methods of environmental assessment and design are studied that are based on an understanding of mutually supportive relationships between people and their physical environment.

Prerequisite: LARCH-202, LARCH-204 or ARCH-202 or INTD-202 or permission of the director

LARCH-307 (Formerly LA532) 3-0-3
History of Landscape Architecture 2

This course is the third of a four-term sequence of history/theory courses. It surveys key examples of landscape architecture from the mid-19th century to the present time. Students strengthen their vocabulary for analyzing and evaluating the designed landscape. Students are also introduced to the influential personalities, projects, events, concepts and thoughts that were pivotal in the philosophical and ethical development of the profession of landscape architecture.

Prerequisite: LARCH-206

LARCH-310 (Formerly LA521) 1-4-3
GIS for Landscape Analysis

Students are introduced to Geographic Information Systems (GIS) applications appropriate to landscape analysis. GIS is an increasingly important software tool for organizing digital spatial data in an accessible and logical manner for site design, recreation master planning, visual analysis, comprehensive planning, resource management and public advocacy.

Prerequisite: LARCH-201 or EC BIO-301

LARCH-312 (Formerly EC BIO-409 for LA Students) 2-2-3
Sustainable Planting Design

In this course students apply the ecological needs of plants to real situations such as greenroofs, xeriscaping, habitat management, brownfield restorations, meadows and highway plantings. The course stresses ecological relationships among plants and how those relationships are used in the design of these environments. In order to design and maintain these environments students need to understand planting design as well as ecology.

Prerequisites: EC BIO-208 or LARCH-305

LARCH-401 (Formerly LA711) 0-12-6
LA Design 7: Interdisciplinary Design

Design VII is an interdisciplinary studio for landscape architecture and other design students who will work in interdisciplinary teams.

Specific studio topics may include brownfield redevelopment, co-housing development, waterfront redevelopment and community revitalization.

Prerequisites: grade of "C" or better in LARCH-301 or ARCH-311 or permission of the director

LARCH-402 (Formerly LA712) 0-12-6
LA Design 8: Restoration Management

This studio course focuses on restoration management methodologies and ecological landscape design principles as they apply to a damaged urban landscape. Students explore sustainable restoration methodologies, how to determine values and make choices, while being cognizant of the costs and public perception. Techniques, practices and materials both sustainable and conventional are evaluated as part of the planning and design processes.

Prerequisites: grade of "C" or better in LARCH-301 or ARCH-311

LARCH-409 (Formerly LA741) 2-2-3
LA Tech: Materials and Methods

This course develops concepts, methods and techniques for understanding construction materials and assembly techniques related to landscape architecture construction. Students are introduced to materials commonly used in landscape construction (wood, stone and brick, concrete and asphalt), with an emphasis on sustainable landscape construction materials and practices. Methods, concepts and principles for developing construction details are also covered, including conventional and digital communication techniques. Specialized aspects such as structural mechanics for various materials and uses are emphasized.

Prerequisites: LARCH-207 and LARCH-201 or LARCH-202

LARCH-411 (Formerly LA533) 3-0-3
LA History 3: Urban Landscape Design

This course includes an overview of the theories and practice of urban landscape design. The evolution of landscape urban design theories is examined through cultural, sociological, environmental and psychological factors through the study of specific urban design projects. The influence of the design profession, university programs, politics, city government and interest groups are examined along with other forces. Contemporary designs, projects and writings are included in an attempt to identify future directions of urban landscape design in the 21st century.

Prerequisites: AHIST-205 and WRTG-2XX

LARCH-412 (Formerly LA742) 3-0-3
LA Tech: Urban Hydrology

Urban hydrology examines sustainable water resource issues as they relate to landscape planning and site planning and design within the urban or urbanizing context. This includes the theory and techniques associated with soil and water conservation and comprehension of the why, when and

where that leads to sustainable planning or design strategies. Topics include surface water hydrology, stormwater runoff estimation, sustainable stormwater management techniques, watershed planning, flood routing and impact mitigation, and erosion and sedimentation control tools and regulations.

Prerequisite: LARCH-303

LARCH-501 (Formerly LA811) 0-12-6
LA Design 9: Urban Design II

In this studio the scope of the project is at the larger urban scale. Whatever the urban design problem, students must deal with the project from inception through design development documentation, including site inventory and analysis, research of appropriate precedents, formulation of concept/design ideation, analysis of various material options and evaluation of the impact of the design upon the community and the physical environment. An appropriate body of theory and research, complemented by sustainable case studies, inform the design process.

Prerequisites: LARCH-303 and LARCH 411; grade of "C" or better in both LARCH-401 and LARCH-402

LARCH-502 (Formerly LA812) 0-12-6
Design X for Landscape Architecture

This course is the last in a series of studios specific to the Landscape Architecture program curriculum. Students work independently and select their own Capstone Project topic. The Capstone Project requires individual research, inventory and analysis, programming and design concept development through final design.

Prerequisites: LARCH-591; grade of "C" or better in LARCH-501

LARCH-506 (Formerly ARCH-505 and LA852) 3-0-3
Professional Practice for Landscape Architecture

Professional Management for Landscape Architecture introduces the ethical, legal, and administrative issues and procedures encountered in numerous forms within landscape architecture practice. Topics include: types of practice, project management, the ethical and legal frameworks in which professional landscape architecture practice occurs, contractual documents, proposal preparation and fee structuring. The preparation of an effective resume and portfolio concludes the course.

Prerequisite: LARCH-401 and LARCH-402

LARCH-507 (Formerly LA808) 3-0-3
Cultural and Landscape Preservation

This course covers theories and practices of historic and cultural preservation as a component of a more comprehensive framework for environmental and resource management. Students study the importance of designating historic districts, buildings and landscapes, as well as accomplishing preservation goals, within the existing regulatory environment. Also covered are interpretive methodologies for understanding current cultural and social patterns and practices in the landscape, with an emphasis on sustainability.

Prerequisites: LARCH-306 or ARCH-421

LARCH-509 (Formerly LA809) 3-0-3
Social and Spatial Patterns

The moral necessity of providing people an urban environment in which to flourish is studied in relation to the physical, institutional and cultural environment. The role and functions of planning and design are examined for their critical contributions and limitations in accommodating a high quality of life.

Prerequisite: LARCH-306 or permission of instructor

LARCH-512 (Formerly LA609) 2-2-3
Urban Landscape Design

This elective course concentrates on site planning and design of exterior space, with an emphasis on site analysis, design development and many issues involved in the final phases of the design process. Topics include circulation, open-space design, site and building entrances, site materials for walls, paving and furnishings. Included is the installation of a portion of the design in a community urban area.

Prerequisites: LARCH-307

LARCH-513 (Formerly LA841) 2-2-3
LA Tech: Construction Documents

This is the final course of the construction technology series. The major emphasis is the preparation of a complete set of technical construction documents with specifications, sustainable practices, and cost estimates. Specific topics include: site demolition, layout and dimensioning, and specification writing.

Co-requisite: LARCH-501

LARCH-515 2-2-3
Advanced GIS for Landscape Analysis

This is an advanced course in Geographic Information Systems (GIS). Students continue their studies in GIS applications appropriate to landscape analyses. GIS is an increasingly important tool for organizing digital spatial data in an accessible and logical manner for site design, recreation master planning, visual analysis, comprehensive planning, resource management and public advocacy.

Prerequisite: LARCH-310

LARCH-521 3-0-3
Environmental Policy

Environmental problems are essentially social, economic and political problems. This course initially traces the evolution of United States environmental policy, legislation and regulations, including the background and context of environmental policymaking; the substantive problems and political process of environmental movements; and contemporary environmental thought with regard to issues of sustainability and environmental justice.

Prerequisites: WRTG-2XX and at least one Level II College Studies course

LARCH-591 (Formerly LA810) 3-0-3
Capstone Preparation

In this writing-intensive seminar, students are introduced to qualitative research methods through lectures, discussions and assignments intended to promote independent methods

of research and design inquiry. Students are to develop a well-articulated, conceptual framework for their individual capstone design project that includes their research topic, method of analysis, a literature review, case studies and detailed work plan.

Prerequisites: grade of "C" or better in LARCH-401 and LARCH-402

LARCH-599 **0-12-6**

LA Design 10: Individual Capstone Project

This course is the last in a series of studios specific to the landscape architecture program curriculum. Students work independently and select their own Capstone Project topic. The Capstone Project requires individual research, inventory and analysis, programming, and design concept development through final design.

Prerequisites: LARCH-591 and grade of C or better in LARCH-501

LAW-101 **3-0-3**

Introduction to Law and Society

An interdisciplinary introduction to legal systems and the law. Laws are created by social and cultural systems and affected by social, economic and political environments. This course will help students understand the development and impact of legal systems through case studies of many current legal issues and debates. There will also be an introduction to international comparisons.

LAW-103 **3-0-3**

Crime and Justice

This course provides an introduction to criminal justice in America. Students will examine the criminal justice system and process in the social context of justice and democratic society. They will study the police and criminal courts as political institutions that make decisions with an eye to the press and popular opinion as well as to race, class and justice.

LAW-105 **3-0-3**

American Government

This course provides an introduction to law and American government in action. In the course students will investigate the structures and processes of American government and the relationships between the three branches of government within the context of how public policy is made and implemented.

LAW-201 **3-0-3**

Constitutional Law and the Supreme Court

This course provides an examination of the sources, growth, development, and interpretation of the United States Constitution. It also examines the role of the Supreme Court in addressing issues of constitutionality, and considers key cases, historically and currently.

LAW-203 **3-0-3**

Comparative Legal Systems

This course provides an introduction to comparative law, and how different legal systems approach the law, legal analysis and legal culture. This course provides an examination of

comparative legal systems, which consist of legal processes, institutions and culture, through a series of thematic comparative case studies. It also examines the role of dispute resolution processes in different legal cultures; addresses issues of civil, criminal and administrative law; and considers key cases, historically and currently.

Prerequisite: WRTG-101

LAW-205 **3-0-3**

Philadelphia Law and Politics

This course provides a critical introduction to local law and politics. This course will focus on social change in cities, focusing on Philadelphia, in the context of structural urban problems. It provides an examination of the Philadelphia legal and political system by having students learn about processes, institutions and culture, through readings and real world experiences in and around the city of Philadelphia. Students will experience local law and politics through readings and discussions as well as by interacting with members of the legal and political community.

Prerequisites: WRTG-101 & HIST-1XX

LAW-300 **3-0-3**

International Law

This course provides an introduction to the international law system that examines the rules binding the international conduct of states and non-state actors. The course covers topics related to the sources and functions of international law, and related issues of jurisdiction and standing. It also focuses on international institutions, and specific issues in international law such as the rules of warfare and peacekeeping; human rights; international trade and communication.

Prerequisites: LAW-101; WRTG-2XX

LAW-302 **3-0-3**

Law and Ethics

(writing intensive)

This course examines the intersection between ethical issues and law in the context of the United States. The course will consider contemporary cases that illustrate the intersection of contemporary legal and ethical issues. There will be a service-learning component to this class.

Prerequisites: LAW-101; WRTG-2XX

LAW-304 **3-0-3**

Law, Media, and Society

This course examines the dynamic interactions between law, technology and media and how they affect a variety of global social and legal issues, including the democratic process, civil rights, and how individuals relate to each other legally, socially, economically, and sexually.

Prerequisite: SOC-2XX

LAW-306 **3-0-3**

Legal Research, Writing, and Moot Court

(writing intensive)

This course will introduce students to the basic tenets of legal research, writing and persuasive arguing by way of a

moot court appellate competition focusing on current controversial topics that affect both American law and society.

Prerequisites: LAW-101; WRTG-2XX

LAW-411 **3-0-3**

Senior Seminar in the First Amendment

This course examines the first amendment rights of speech, press and association, and focuses on landmark Supreme Court rulings and scholarly commentary. The course will provide students with skills to critically interpret the First Amendment and apply lessons learned to their own lives. It will cover such issues as libel law, obscenity, symbolic speech, and freedom of the press and freedom of association.

Prerequisites: LAW 201; LAW-302; LAW-306

LAW-499 **1-2-3**

Senior Capstone: Public Policy Advocacy

(writing intensive)

This capstone course for the Law and Society major combines a classroom seminar (50 minutes per week) on advocacy skills with a real-world public policy advocacy project within either a self-selected pre-existing organization or an initiative of the student's own creation and design. Students will also receive 100 minutes of designated instruction time, via the web, during which their E-Reports will be reviewed and the status of their projects will be discussed. Students will review and integrate the skills and knowledge they developed during previous courses in the Law and Society curriculum while also applying the principles of public policy theory and oral and written advocacy to the student's selected project.

Prerequisites: LAW-411 (Senior Seminar)

Mathematics

Quantitative Reasoning

The College Studies curriculum requires every Philadelphia University graduate to complete a mathematics education that includes differential and integral calculus, to ensure that our graduates have developed quantitative reasoning skills that strengthen their critical thinking abilities. To fulfill this core curriculum requirement, students must complete the highest calculus course for which they are qualified, up to Calculus I.

The specific course sequence will be determined by the student's major and the level of mathematics with which the student enters the University as demonstrated by previous coursework and/or placement testing. The two-course sequences are:

MATH-100/1 (L130/13)1: Finite Math

MATH-103 (L132): Intro. to Calculus

or

MATH-102 (L135): Pre-Calculus

MATH-103 (L132): Intro. to Calculus

or

MATH-102 (L135): Pre-Calculus &

MATH-111 (L141): Calculus I

or

MATH-103 (L132): Intro. to Calculus and one Free Elective

or

MATH-111 (L141): Calculus I and one Free Elective

MATH-099 (Formerly M99) **3-2-(3)**

Fundamentals of College Mathematics

This course covers those topics in arithmetic and algebra that are essential to further work involving mathematics. Students will study fractions, decimals and percentages, signed numbers, linear and quadratic equations, exponents and scientific notation, factoring, techniques of graphing, equations of straight lines and linear systems of equations. There will be an emphasis on applications. Use of the scientific calculator will be discussed. Credits earned may not be applied toward graduation requirements. Students must earn a "C" or better to receive credit for fundamentals courses. See "Fundamentals Courses" in the section "Academic Policies."

Students required to take MATH-099 must pass the course before taking CHEM 103, Chemistry I.

MATH-100 (Formerly L130) **3-2-3**

Finite Mathematics

While the content of MATH-100 is identical to that of MATH-101, more time is devoted during the semester to the review and use of elementary mathematical operations. See MATH-101 for content.

MATH-101 (Formerly L131) **3-0-3**

Finite Mathematics

An introduction to the concept of a mathematical model, with special emphasis on using functions to model problems in business and economics. The functions and their graphs that are studied (needed for MATH-103) include polynomials (esp. linear and quadratic), rationals, exponentials and logarithms. Applications are made to finance, including annuities. In addition, simultaneous linear equations, Gauss-Jordan elimination, matrix algebra and linear programming are covered.

MATH-102 (Formerly L135) **3-0-3**

Pre-Calculus

The fundamentals of college algebra, analytic geometry and trigonometry will be covered, with particular emphasis on those topics necessary for the calculus sequence.

MATH-103 (Formerly L132) **3-0-3**

Introduction to Calculus

Students will be taught an introduction to the differential and integral calculus of polynomials, rational functions, exponentials and logarithms. Emphasis is placed on the use of calculus in the study of rate of change, determination of extrema and area under the curve. Not for Science majors.

Prerequisite: MATH-100 or MATH-101 or MATH-102

<p>MATH-111 (Formerly L141) 4-0-4 Calculus I Functions, slope and rate of change, limits, derivations of algebraic functions, maxima and minima applications, indefinite integration, integration by substitution, sigma notation, area between two curves are taught. Knowledge of algebra, geometry and trigonometric functions is assumed.</p>	<p>MATH-318 (Formerly M173) 3-0-3 Complex Variables Students will study analytical functions; Cauchy-Riemann equations; power series; infinite series; calculus of residues; contour integration; and conformal mapping. <i>Prerequisite: MATH-225</i></p>
<p>MATH-112 (Formerly L142) 4-0-4 Calculus II Students will study differentiation and integration of transcendental functions, theory and methods of integration and applications, infinite series, convergent tests, Maclaurin and Taylor series. Convergence of Taylor series. <i>Prerequisite: MATH-111</i></p>	<p>MATH-321 (Formerly M141) 3-0-3 Probability and Statistics Students will study the fundamentals of probability, discrete and continuous random variables, probability distributions, and hypothesis testing. <i>Prerequisite: MATH-112</i></p>
<p>MATH-213 (Formerly M113) 4-0-4 Calculus III Students will study analytic geometry in 3D-space; algebra of vectors, differentiation and integration of vectors; partial differentiation, multiple integrals, and infinite series. <i>Prerequisite: MATH-112</i></p>	<p>MATH-323 (Formerly M143) 3-0-3 Mathematical Statistics This course is designed to give the student some of the background needed to pursue more advanced courses that use statistical techniques. The content of the course will include topics from probability theory that are necessary for an understanding of the mathematical foundations of statistics. These topics will include: probability distributions, likelihood functions, properties of expectation operators, moment-generating functions, the central-limit theorem, confidence intervals and hypothesis testing. The student will be expected to be familiar with the topics of calculus through multiple integrals. <i>Prerequisite: MATH-321</i></p>
<p>MATH-214 (Formerly M121) 3-0-3 Linear Algebra Students will study the theory and solution techniques for systems of linear equations; vectors, matrices, determinants; eigenvalues and eigenvectors; vector spaces, and linear transformations. <i>Prerequisite: MATH-112</i></p>	<p>MATH-326 (Formerly M163) 3-0-3 Modern Algebra Study of sets and mappings; group, ring and field theory; homomorphisms and isomorphisms; Lagrange's theorem; abelian and cyclic groups; symmetric groups; polynomial rings. <i>Prerequisite: MATH-214</i></p>
<p>MATH-225 (Formerly M122) 3-0-3 Differential Equations Students will study first-order equations; constant-coefficient, nth-order homogeneous and non-homogeneous equations; special non-linear equations; elementary applications; and power series solutions. The course may also include elementary numerical techniques for solutions of ordinary differential equations and other computer topics. <i>Prerequisite: MATH-213</i></p>	<p>MATH-331 (Formerly M131) 3-0-3 Mathematical Methods in Chemistry, Physics and Engineering This is an advanced course covering topics chosen from the following: matrix algebra, Fourier series, Sturm-Liouville systems, boundary-value problems for ordinary differential equations, Laplace's equation, introduction to Bessel's equation and Bessel functions. <i>Prerequisite: MATH-225</i></p>
<p>MATH-316 (Formerly M125) 3-0-3 Partial Differential Equations The course will focus on how modeling physical phenomena leads to partial differential equations; the heat conduction, wave propagation and potential equations; classification of linear second-order equations; boundary-value problems; Fourier series; separation of variables and special functions. <i>Prerequisite: MATH-225</i></p>	<p>MENGR-301 3-2-3 Machine Design Students will study kinematics and dynamics of machinery, including analytical kinematics, force analysis, cam design and balancing, and the application of elementary mechanics of solids to analyze and size machine components for stress and deflection. Introduction to finite element analysis with emphasis on beam and plate models will be taught. <i>Prerequisite: ENGR-218</i></p>
<p>MATH-317 (Formerly M171) 3-0-3 Real Variables Students will study topics related to functions of a real variable, including measure and integration; differentiation; abstract spaces; general measure and integration theory. <i>Prerequisite: MATH-225</i></p>	<p>MENGR-325 3-0-3 Engineering Vibrations Vibrations will be a thorough treatment of vibration theory and its engineering applications, from simple degree to multi degree-of-freedom system. Topics will include harmonic</p>

excitation, forced responses, multiple degree-of-freedom systems, design for vibration suppression, distributed parameter systems, vibration testing and experimental modal analysis, and finite element method.

Prerequisites: ENGR-218

MENGR-405 3-1-3

Introduction to Mechatronics

This course will prepare students in the interdisciplinary field of engineering that comprises the integration of mechanics, electronics and computer technology coordinated by control architecture. Emphasis on computer-integrated electromechanical systems will help the students to understand the design, analysis and practical approach of system integration.

Prerequisite: ENGR 322

MENGR-407 3-0-3

Thermodynamics and Heat Transfer I

This course considers fundamental laws governing the transformation of heat into mechanical energy. Properties of gases and vapors and the processes between states are explored as are applications of the first and second laws of thermodynamics. A study of the transfer of heat by conduction, convection and radiation in steady and unsteady flow is also conducted.

Prerequisite: MATH-112, PHYS-201, PHYS-201L

MENGR-427 3-0-3

System Dynamics and Controls

Students will study modeling of physical systems including electromechanical systems; reduction of block diagrams; signal flow graphs and Mason's gain formula; response of second order systems: natural frequency and damping ratio and how they relate to risk-time, peak-time, settling-time, and overshoot; stability and the Routh-Hurwitz criterion; steady-state error and sensitivity; root locus; and Design of cascade compensators using root locus and frequency response.

Prerequisite: IENGR-311, ENGR-218

MENGR-428 3-0-3

Thermodynamics and Heat Transfer II

This course covers energy analysis; vapor and gas power cycles; vapor and gas refrigeration cycles; thermodynamic properties of mixtures and solutions; psychrometry and air conditioning; reacting mixtures and combustion.

Prerequisite: MENGR 407

MGMT-301 (Formerly B123) 3-0-3

Principles of Management

Effective management is fundamental for the successful operation of all types of enterprises. The course will present the principles, techniques and concepts needed for managerial analysis and decision making. Functions highlighted include planning, organizing, staffing and controlling.

MGMT-303 3-0-3

Logistics in East Asia

Given the global nature of the world of logistics, today's students must have a grasp of the political, social and culture factors that contribute to forming a successful consumer

products strategy. A student's understanding of geo-political structure will allow them to explore logistic strategies, learn the key steps of the analytical process used to help grow a global value chain, learn to define measurable objectives and develop strategies to promote logistic efficiencies.

Prerequisite: MGMT-301

MGMT-305 (Formerly B148) 3-0-3

Apparel/Textile Brand Management

Brand building is an essential strategy for all successful companies in the apparel supply chain. Classroom instruction will focus on the techniques of brand growth. Case studies will be used as the foundation for a research project.

Prerequisite: MKTG-102

First offered Spring 2006

MGMT-307 (Formerly B168) 3-0-3

International Management

Introduces students to the special aspects of managing a company in the global environment. Issues involved in understanding and applying the international and cross-cultural dimensions of the traditional management functions, such as organization, control, motivation, human resources and labor relations; and organization theory are studied. Lectures, readings, exercises and cases will be used.

Prerequisite: MGMT-301

MGMT-309 (Formerly B135) 3-0-3

Systems Analysis

This course introduces the structured approach to design of new applications software, software systems, networks and/or World Wide Web installations. It deals with the usual life cycle for such operations. Analysis includes approaches to specifying input and output, file structures, trade-off techniques, implementation, documentation and testing. Other approaches such as rapid application development and object-oriented analysis are discussed.

Prerequisite: MIS-202

MGMT-310 (Formerly B160) 3-0-3

Organizational Behavior

The course includes an in-depth exploration of topics such as communication, group dynamics, group roles, team building, power and politics, leadership and negotiation and conflict resolution. In addition, issues of organizational culture and diversity are examined. Through readings, discussions, class activities and projects, students learn how to be effective organizational communicators, team members and leaders. Students also gain an understanding of culture and diversity issues and how to effectively manage them.

Prerequisites: MGMT-301, junior status

MGMT-311 (Formerly B176) 3-0-3

Colloquium in Management

Consideration of selected relevant issues in management and society that are of serious interest to students and faculty, such as technology of the future, impact of data banks,

management and public policy, planning systems, education and human resources will be discussed.

Prerequisites: senior status, faculty recommendation and 3.5 or better G.P.A.

MGMT-315 (Formerly B165) 3-0-3
Organizational Politics and Negotiations

This is a course in organizational politics — power, influence, conflict and conflict management. It has two goals: first, to develop students' skills in recognizing politics and conflict situations; and second, to teach students to use negotiating to achieve personal organizational goals. Through readings, discussion and role-plays, a wide range of conflict and negotiating contexts will be considered. These include situations in interpersonal, interorganizational and union-management relationships.

Prerequisites: MGMT-301, junior status

MGMT-316 (Formerly B184) 3-0-3
Health Services Management

An analysis of the managerial process as it relates to the planning, organizing, staffing, directing and controlling of health care services. The techniques of effective decision making and problem solving are addressed. A systems orientation, as it applies to the health care services organization, forms the theoretical basis of the course. Only available in the evening.

Note: For students in the B.S. for Health Services Management program. This course replaces MGMT-301 Principles of Management as a prerequisite for subsequent courses.

MGMT-320 (Formerly B162) 3-0-3
Human Resource Management

This course surveys the roles, policies and procedures of human resource management (HRM) in organizations today. Students learn the steps to staff and motivate a workforce and appreciate the role of quantitative and qualitative decision making in HRM. Course materials deal with environmental impacts on HRM, equal employment opportunity, human resource planning, selection, performance evaluation, wage and salary administration, training and other relevant topics.

Prerequisites: MGMT-301, junior status

MGMT-326 (Formerly B144) 3-0-3
Total Quality Management Solving Methods

The principles of Total Quality Management (TQM) are becoming the standards of practice for businesses. This course explores the history of TQM and the principles of Deming and the other major contributors to current TQM practices. How businesses use TQM principles to improve processes, products and services, involve all employees and gain a competitive edge will be studied. The application of TQM to a variety of industries will be explored.

Prerequisites: MATH-321 or STAT-201; MGMT-301; MKTG-102; pre- or coregistration in MATH-321 or STAT-201

MGMT-327 (Formerly B187) 3-0-3
Emerging Issues in Health Care

The purpose of this course is to explore the current trends in health care and issues affecting the organizational changes in the industry with regard to delivery of health care services in a wide variety of settings. Topics will include history of U.S. health care, current reform proposals, universal health care insurance, ethical issues, gerontological issues, labor relations and the changing workforce in health care and comparative perspectives of health care delivery in other countries. Only available in the evening.

Prerequisites: MGMT-301 or MGMT-316, junior status

MGMT-331 (Formerly B147) 3-0-3
Compensation and Benefits

This course is designed to provide participants with an understanding of the concepts, components and activities related to designing, implementing and administering a compensation and benefits program. The compensation policies of internal consistency, external competitiveness, employee contribution and plan administration will be examined in detail. Techniques explored are job analysis, job description, job evaluation, market surveying, pay policy-line derivation, incentive programs, planning and budgetary controls. Only available in the evening.

Prerequisite: MGMT-301

MGMT-381 (Formerly B199) 0-0-3
Independent Study in Management

Students will complete intensive independent study of a chosen subject. The student is expected to read a substantial number of major works in the field and to prepare a critical documented paper. See also the statement on Independent Study under "Academic Policies."

Prerequisites: permission required. See appropriate form online at the University Registrar's webpage www.philau.edu/registrar/ for more information.

MGMT-401 (Formerly B141) 3-0-3
Operations Management

This course is a comprehensive survey of production and service operations management, topics and functions. Topics include methods and work measurement, materials management, plant location and layout, production planning and control, maintenance, quality control, "Total Quality," Japanese management styles, "Systems Approach," and decision tools such as PERT, linear programming, queuing theory, sampling and simulation. Service-delivery applications and activities are also highlighted.

Prerequisites: INFO-101, MGMT-301 and MATH-103 or MATH-111; pre- or Co-requisite: STAT-202 or MATH-321

MGMT-405 (Formerly B149) 3-2-4
Apparel/Textile Supply Chain Management

This course will bring into sharp focus the global relationship that exists between all of the elements of the textile-apparel-retail supply chain. Areas covered include traditional management functions of control over timeliness of production, and quality and labor relations in the global marketplace.

Prerequisite: FASHMGT-401

- MGMT-411 (Formerly B170) 3-0-3**
Entrepreneurship Seminar
 The student assumes the role of the initiator and manager of a firm. Emphasis is on the required planning prior to the inception of operations and entrepreneurial problems in achieving cash-flow equilibrium. Each student is required to prepare a formal business plan. Interdisciplinary concepts are studied. May be used as a management elective.
Prerequisites: MGMT-301, MKTG-102, senior status
- MGMT-412 (Formerly B172) 3-0-3**
Management Seminar
 This course is designed for senior management majors and integrates and extends concepts learned in other upper-level management courses. The dynamic nature of management is emphasized through reading, analyzing and discussing recent literature in terms of the current business environment. Students examine topics including 21st-century career management; the role of education and technology in organizations; and future trends in management and organizations. The course includes individual and group readings, cases, and research projects that are presented as written and oral assignments.
Prerequisites: senior status, pre- or Co-requisite: MIS-202
- MGMT-413 (Formerly B186) 3-0-3**
Health Services Management Seminar
 This course will examine advanced topics in health-services management. An atmosphere for shared learning is promoted by individual and group research in substantive areas relevant to the health-services industry. This course is only available in the evening.
Prerequisites: MGMT-428, MGMT-316
- MGMT-416 (Formerly B145) 3-0-3**
Training and Development
 A course designed to provide students interested in the field of human resources with the knowledge and skills necessary to understand the processes of learning, training and development, and their applications in business and industry. Students will learn adult-learning theories, identification of training and program needs, and program design and evaluation. The course includes participative lectures and discussion, media techniques, case studies, role-play, team-building/group activities, games and simulations and instruction methodology. This course is only available in the evening.
Prerequisite: MGMT-320
- MGMT-418 (Formerly B161) 3-0-3**
Industrial Relations
 This course investigates union-management relations in both private and public sectors. Students develop an understanding of the industrial-relations systems in the United States, including past and current changes, union and management responses to changes and the future of union-management relations. Students learn to appreciate bargaining, and increase their negotiating skills through discussing and applying collective-bargaining and other dispute-resolution techniques in a negotiation simulation.
Prerequisites: MGMT-301, junior status
- MGMT-419 (Formerly B179) 3-0-3**
Diversity Management
 This course focuses on managing a diverse workforce and how organizations can change systems, structures and practices to eliminate barriers that keep diverse workforces and organizations from reaching full potential. The course examines research and practice in diversity management on topics including interpersonal skills, training, evaluation, managerial practices, recruiting, retention, benefits and compensation. This course may not be taken if student completed as a special topics course, MGMT-311.
Prerequisite: MGMT-301
- MGMT-428 (Formerly B183) 3-0-3**
Health Services Delivery System
 This course will provide an overview of the history, evolution and major components of U.S. health care systems. Systems theory will form the basis for this course. Topics covered will include the organization of health care services, the hospital, the physician, supply and demand in health care, third-party payers, the role of government, managed care and comparisons of health care systems in other countries. This course is only available in the evening.
- MGMT-490N (Formerly MGMT-490, B171) 3-0-6**
Business Policy and Strategy
(writing intensive)
 The process and techniques of strategy formulation, implementation and evaluation are studied and applied. Case studies of domestic and international companies and not-for-profit organizations are used to integrate strategic management concepts with knowledge acquired in other functional area courses. Includes extensive written individual and team assignments and oral presentations. Students taking this course cannot take MGMT-491 for credit.
Prerequisites: senior status, INFO-101, MGMT-301, MKTG-102, FINC-301
- MGMT-491N (Formerly MGMT-491, B180) 3-0-6**
Textile, Retail and Apparel Business Policy and Strategy
(writing intensive)
 The process and techniques of strategy formulation, implementation and evaluation are studied and applied as they pertain to the textile, apparel and retail industries. Case studies of domestic and international companies are used to integrate strategic-management concepts with knowledge acquired in other functional area courses. Includes extensive written individual and team assignments and oral presentations. Students taking this course cannot take MGMT-490 for credit.
Prerequisites: senior status, MGMT-301, MKTG-102, FINC-301, TEXT-101, FASHMGT-101
- MIS-202 (Formerly IS16) 3-0-3**
Management Information Systems
 This course is designed for future managerial end users of e-business information systems who will both use and manage information technology (IT). The course addresses the strategic, tactical and operational uses of IT in business for problem solving. Frequent computer assignments will

complement the topics discussed in class as the student develops more sophisticated skills in databases design, implementing queries and reports, exporting data to spreadsheets and using spreadsheets and graphics to model businesses for decision making.

Prerequisite: INFO-101

MIS-207 (Formerly IS12) 3-0-3
Programming for Problem Solving

This course introduces an appropriate high-level programming language or languages and explores computer solutions to business-related problems. The course will include techniques of problem definition, planning, writing well-structured programs, testing and debugging and documentation. Extensive practice will be gained in writing programs on the University's computing equipment.

Prerequisite: MIS-301

MIS-301 (Formerly IS10) 3-0-3
Survey of Programming Languages

This course will provide an overview of the basic structures and methodologies for the major functional and object-oriented programming languages. The course will discuss the different syntaxes of the language as well as their similarities. Languages will include C, C++, Visual Basic, Java and a review of the basic Internet languages.

MIS-302 (Formerly IS74) (Also listed as ENGR-217) 3-0-3
Information Systems Design

The course deals with analysis and design of computer-based information systems. This includes definition of databases, measures of effectiveness and management-staff interfaces. This begins with analysis of the situation and its particular needs before attempting a solution. Depending on the size and background of class members, students may form groups to develop projects of their own choosing or review case studies from engineering or manufacturing or service environments for analysis and design.

Prerequisites: MATH-103 or a more advanced math course

MIS-304 (Formerly IS73) 3-0-3
Foundations of Artificial Intelligence

Overview of the computational and knowledge engineering issues and techniques used in artificial intelligence, leading to the development of expert and fuzzy systems, including representations of knowledge, search strategies for production systems, rule-based deductions, heuristic programming, paradigms for synthesis and analysis of class systems, exact and inexact reasoning models, implementation examples from machine learning and natural language processing.

Prerequisite: MIS-405

MIS-305 (Formerly IS11) 3-0-3
Database Analysis, Design and Management

This course will examine the design and use of databases. Most of the work will be done using relational-database management systems. Topics include database analysis and design using Entity Relationship modeling tools, design of well-structured relations (tables) and implementation of appropriate applications. Other models, such as object-oriented

databases, will be introduced. In addition, the ethical collection, use and management of data, as well as security issues, will be addressed. Problems in actual database implementation will be assigned using the University's computer facilities.

Prerequisite: MIS-207 or MIS-202

MIS-312 (Formerly IS21) 3-0-3
Ethical and Social Issues of Computing

This course provides an understanding of the ethical and societal issues associated with the computing field. Students will learn the responsibilities of a computer professional, the basic elements of ethical and social analysis and the basic skills for doing ethical and social analysis, with application to computing issues.

MIS-323 (Formerly IS83) 3-0-3
Operating Systems

Study of operating system concepts common to various classes of computers, including file systems, CPU scheduling, memory management, virtual memory, disk scheduling, deadlocks, concurrent processes and programming, protection and security and distributed systems. Exploration of various aspects of specific systems (e.g., UNIX, VMS, MS-DOS, Windows).

Prerequisite: MIS-405 or permission of the instructor

MIS-371 (Formerly IS91) 3-0-3
Special Topics

This course provides an in-depth treatment of recent advances in subjects of current interest in the field of computer science. The special topics in a given semester will be announced before registration. Programming projects will be assigned in a language selected by the instructor. Oral and/or written reports are required.

Prerequisite: junior status

MIS-381 (Formerly IS98) 0-0-3
Independent Study in Information Systems

This course allows students to pursue topics not covered in the regular program. The student will either: (1) study in some detail a topic of their choice (subject to faculty approval); or, (2) write a substantial documentation. (The University retains the rights of use.) The faculty supervisor will test the student on the material. An oral presentation of the results of the study will be required. This course cannot be taken to replace a required course. For further details, see "Independent Study" in the "Academic Policies" section. Permission required. See appropriate form online at the University Registrar's webpage www.philau.edu/registrar/ for more information.

MIS-401 (Formerly IS13) 3-0-3
Computer Networking

This course offers students an in-depth study of computer networks and their role in the information technology infrastructure of an enterprise. Topics will include logical and physical organizations of computer networks, hardware and software, the ISO model, communications protocols especially TCP/IP. Students will study LANs, MANs, BNs and

WANs. Network design, management, performance, control, encryption and security will be discussed. The University's computer equipment will be used for hands-on, network-management assignments.

Prerequisite: junior status or permission of the instructor

MIS-404 (Formerly IS15) 3-0-3
Data Analysis for Decision Making

This course continues the development of students' skills in data analysis and modeling. Emphasis will be on data warehousing and data mining. Topics will also include non-relational databases and management systems. Emphasis will be on effectiveness and uses of data analysis for management decisions.

Prerequisites: MIS-301, MIS-305

MIS-405 (Formerly IS52) 3-0-3
Programming In C

This course introduces fundamental principles of computer science as applied to problem solving. Main topics include problem specification and decomposition, design of algorithms, evolution of computers and computing, data and procedural abstractions, fundamental instructions, control mechanisms and modular programming. Programming projects will be in C.

Prerequisite: MIS-301 or permission of the instructor

MIS-406 (Formerly IS53) 3-0-3
Programming in C++

This course is the continuation of MIS-422 and introduces more advanced problem-solving techniques through the use of object-oriented techniques such as information hiding and code reuse, classes and data abstractions, single/multiple inheritance, operator/function overloading and polymorphism. More specifics include pointers, stacks, queues, linked lists, binary trees, linear/binary search techniques, recursion and sorting. Programming projects will be in C++.

Prerequisite: MIS-405

MIS-407 (Formerly IS14) 3-0-3
Project Engineering

The course provides a practical introduction to design and implementation of large- and small-scale projects. It will include a survey of current project procedural paradigms. When feasible, students will work in groups to develop a tangible product in an area of interest not previously defined. Such projects may involve software, industrial design, textile product development or other. Student groups will be expected to follow formal, project-management guidelines including creation and assignment of tasks, budgeting, critical-path analysis, reports, et al. Software support for projects will be utilized.

Prerequisite: MATH-103

MIS-411 (Formerly IS23) 3-0-3
Discrete Structures

This course will cover a review of set algebra; and the study of mathematical reasoning; Boolean algebra and logic

circuits; combinatorics; discrete probability; graphs; trees; recurrence relations; and dynamical systems.

Prerequisite: MIS-301

MIS-413 (Formerly IS31) 3-0-3
Algorithms and Data Structures

Students will study of advanced programming techniques and data representations, including recursion, stacks and queues; packaging data abstraction; advanced searching and sorting; files; binary search trees; analysis of algorithms and computational complexity; and advanced data structures. Programming assignments will be submitted.

Prerequisite: MIS-301

MIS-422 (Formerly IS51) 3-0-3
Applied Software Development

This is a second-level programming course offering students experience in planning, developing and testing short software projects. This course will be a continuation of MIS-207. Class periods will involve development methodology, software approaches and a structured walk-through for each project, as well as provide time for students to report on progress and discuss project approaches and problems. Computer languages and "script" currently undergo rapid development and change necessitating equivalent evolution of this course.

Prerequisite: MIS-207

MIS-425 (Formerly IS85) 3-0-3
Web Construction and E-Commerce Applications

This course will focus on the use of new and emerging technologies to create web-based designs and programs to support business and e-commerce applications. The course will require the completion of several program assignments and projects.

Prerequisite: MIS-301

MKTG-102 (Formerly B221) 3-0-3
Principles of Marketing

This is a basic course in which the main functions, institutions and concepts of marketing are studied. Attention is focused on providing an analytical and corporate framework for studying and understanding the marketing system within changing environmental forces.

MKTG-115 (Formerly B235) 3-0-3
Fashion Merchandising

This course provides students with a general understanding of Fashion Merchandising and is designed to help students to become familiar with the fashion business and its "industries." It discusses the men's, women's and children's wear and home furnishings and their interrelationships. This course uses an interdisciplinary approach to the fashion business as it relates to cultural, historical and economic features as a central theme.

MKTG-207 (Formerly B231) 3-0-3
Consumer Behavior

This course provides comprehensive understanding of the many dimensions of consumer behavior and the

contributions of behavioral science to marketing. The focus will be on understanding consumer needs.

Prerequisite: MKTG-102

MKTG-217 (Formerly B241) 3-0-3
Retailing Strategy and Structure

Students will gain a comprehensive understanding of retail strategy in the dynamic retailing environment. Special attention is given to retailing structure since it underlies the strategic decision making of retailing management.

Prerequisite: MKTG-102

MKTG-302 (Formerly B237)
Product Development and Innovation

This course is designed to expose students to the concept of innovation and an understanding of the process of product/service development and innovative marketing. Students learn how a product is conceptualized and ultimately commercialized. They will understand the factors that play a central role in the process.

Prerequisite: MKTG-102

MKTG-310 (Formerly B240) 3-0-3
Marketing Communications

This course examines the vital role of marketing communications in the development of marketing strategy. Integrated marketing communications (IMC) is emphasized as students explore the use of advertising, personal selling, sales promotions, Internet marketing, database marketing, public relations, and more to enhance brand equity. The strategy and planning involved in the development of integrated campaigns is emphasized.

Prerequisite: MKTG-207

MKTG-315 (Formerly B233) 3-0-3
Marketing in an Electronic Environment

This course investigates the ways in which new technologies are changing the field of marketing. Major topics include Internet advertising, database marketing, sales-force automation and customer relationship-management software tools. Other topics include the impact of new technologies on distribution strategies, online pricing models, mass-customization strategies, data mining and media implications.

Prerequisite: MKTG-102

MKTG-318 (Formerly B243) 3-0-3
Sales Management

Sales management is the planning, direction and control of the selling activities of a business. Topics include recruiting, selecting, training, equipping, assigning, routing, supervising, compensating and motivating the sales force. This course focuses on business-to-business marketing.

Prerequisite: MKTG-102

MKTG-324 (Formerly B244) 3-0-3
International Marketing

This course is an investigation of the marketing concept in a global environment. Marketing practices through which various businesses adapt to the international environment are studied. Attention is also given to comparative marketing

systems and planning and organizing for export-import operations.

Prerequisite: MKTG-102

MKTG-328 (Formerly B251) 3-0-3
Merchandise Buying/Operations

The course provides the student with the understanding of the interdependence of the merchandising and operations functions. Students have a comprehensive understanding of the retail business from gross sales to net profit. To achieve this understanding, students are required to prepare a merchandising/operations plan that integrates all of the elements of doing business in the retail environment.

Prerequisites: INFO-101, MKTG-217

MKTG-381 (Formerly B299) 0-0-3
Independent Study in Marketing

Intensive independent study of a chosen subject. The student is expected to read a substantial number of major works in the field and to prepare a critical, documented paper. See the statement on Independent Study under "Academic Policies."

Prerequisites: permission required. See appropriate form online on the University Registrar's webpage www.philau.edu/registrar/ for more information.

MKTG-391 (Formerly B261) 3-0-3
Marketing Research

This course exposes students to marketing-research techniques and procedures used in gathering, recording, analyzing and reporting of data related to marketing problems.

Prerequisites: MKTG-102, MKTG-207 and pre- or Co-requisite STAT-202

MKTG-408 (Formerly B303) 3-0-3
Survey of E-Commerce

This is an introductory course in which the size, scope and impact of e-commerce is explored. This course includes discussions about how technology impacts business processes and transactions. A significant part of the course will discuss the e-business technology platform. Additional topics include business-to-business market exchanges, online auctions, electronic-payment systems, market valuation of e-commerce firms, and government policies and issues concerning e-commerce such as privacy, regulations and ethics.

MKTG-412 (Formerly B262) 3-0-3
Marketing Strategy Seminar

Skills will be developed for making better decisions by learning to integrate various topics of marketing. The importance and know-how of anticipating, recognizing and adapting to external forces on the decision-making process and organization will be discussed. Emphasis will be placed on incorporating the most recent literature, which is of theoretical and practical importance, in the decision-making process. The course is built around readings, marketing cases, research papers and problem sets. A comprehensive marketing plan will be developed.

Prerequisites: senior status; pre- or Co-requisites: MKTG-207, MKTG-310, MKTG-391

MKTG-413 (Formerly B333) 2-2-3
E-Site Design

E-Site Design is an introductory web design course. Students explore fundamental concepts of web site design and learn how to develop, post and maintain a web site using popular software. Emphasis is on mastering basic web site design and management skills for business applications that exceed a rudimentary knowledge of the techniques offered by application software packages. The student will engage in hands-on computer experience in the computer labs.

Note: for Graphic Design or Interactive Design and Media majors only.

Prerequisite: permission of the director of Graphic Design Communication.

Physician Assistant Studies

Note: All of the below listed PAS courses, with the exception of PAS-100, PAS-230, PAS-320, PAS-330 and PAS-400, are restricted to students matriculated in the Physician Assistant Studies Program.

PAS-400 1-0-1
Medical Terminology

This competency-based course covers the structure, definition and utilization of basic medical terminology for students entering the health professions. The course is designed for students with some health care experience. Independent reading, workbook exercises, case studies and interactive computer software are the learning modalities used in this experience.

PAS-407A & B/PASF-507 A & B GR 3-4-5
Advanced Anatomy

This lecture and laboratory course will review basic histology along with the major anatomical structures of the human using a regional organization. Laboratory sessions utilizing microscopic examination, models and cadaver specimen dissection will augment lecture material.

Prerequisite: BIOL-202 and BIOL-202L

PAS-410/PASF-510 GR 2-0-2
Medical and Professional Ethics

Understanding the philosophical principles related to bio-medical ethics, patient-practitioner relationships and the role of the physician assistant provider within the health care system are the main topics encompassed in this lecture and discussion seminar course.

PAS-411/PASF-511 GR 3-0-3
Applied Behavioral Science

The topics of developmental psychology, abnormal psychology, human sexuality, stress responses, behaviors related to psychological health and illness and the diagnosis and management of common psychological disorders are the focus of this lecture course.

PAS-413/PASF-513 GR 3-0-3
Medical Physiology and Pathophysiology

This lecture course is designed to teach the principles of human medical physiology along with the physiological mechanisms of common disease states.

Prerequisites: BIOL-202 and BIOL-202L, BIOL-221 and BIOL-221L

PAS-417/PASF-517 GR 4-2-5
Medical History and Physical Diagnosis

This lecture and practical laboratory course will introduce the physician assistant student to the techniques for eliciting a medical history and performing a complete physical examination on humans. The interpretation of history and physical examination findings as applicable to physiological and disease states will also be discussed. Laboratory sessions, hospital experiences and writing assignments will enhance the learning experience.

PAS-421/PASF-521 GR 2-0-2
Medical Genetics and Microbiology

This lecture course presents current concepts and issues in medical genetics, immunology and microbiology. It focuses on diseases of genetic origin, the function of the immune system and emerging trends in disorders caused by microorganisms.

Prerequisite: BIOL-221 and BIOL-221L

PE-00 0-1-.5
Varsity Athlete

Students who have participated on one of the University's 12 intercollegiate sports teams for one season will satisfy the requirement for this course. Students must register for this course in the semester they expect to receive the course credit. Students may register for this course two times.

PE-02 0-1-.5
Recreation and Wellness

Students participate in 15 or more hours of recreation and wellness activities offered through the Department of Athletics. Opportunities include participation in intramural sports, recreational courses in team and individual sports, and wellness courses such as yoga, stress management, and tailored exercise programs. All activities must be validated by a representative from the Department of Athletics to earn credit. Students must register for the course at the beginning of the semester to receive course credit.

PHOTO-101 (Formerly PHOTO-111 and H323) 2-3-3
Introduction to Photography: Black and White

This course introduces the technical aspects and controls of a manual 35mm camera together with silver-based black & white film developing and printing methods. Students will develop a fundamental vocabulary for constructive critique of photographs and will generate a photographic portfolio piece, exploring a subject of interest.

PHOTO-102 (Formerly DIGD-310 and D627) 1-5-3
Introduction to Photography: Digital

This course is an introduction to the conceptual and technical aspects of digital photography through projects,

presentations, critiques and lectures based on both classical and constructed methods of image creation. Topics include: basic camera functions, importing files from digital media, color management, image improvement and manipulation using Adobe Photoshop, Bridge, and Light Room and preparing final images for print and/or screen presentation.

PHOTO-201 (Formerly PHOTO-301 and G622) 1-5-3
Studio Photography

This course introduces students to the fundamentals of photographic image making within the controlled environment of the studio. Emphasis is given to lighting techniques using professional strobe equipment; single-lens reflex digital capture on the computer, software for capturing digital photographs, as well as the role of props and setting in the generation of portraiture, fashion and still-life images.

Prerequisite: PHOTO-101 or PHOTO-102 or PHOTO-204

PHOTO-204 (Formerly GRAPH-204 and G621) 1-5-3
Introduction to Photography for Graphic Design Communication

Required for Graphic Design Communication majors, this course focuses upon photography as a tool for graphic designers. Students are introduced to: film and digital camera use, exposure, image processing, and printing; table-top setups with professional studio lighting equipment; and digital documentation of work for portfolios.

Prerequisite: DSGNFND-203 or permission of the director of the Graphic Design Communication program

PHOTO-302 (Formerly ARCH-411 and A605) 2-2-3
Architectural Photography

In this course students acquire the skills to apply a documentary methodology to thematic explorations of subject matter, specifically related to architecture and the built environment, interiors and cultural landscapes. Students learn to critique photographs of buildings and spaces and to produce high-quality black and white prints.

PHOTO-303 (Formerly ARCH-305) 2-2-3
Introduction to the View Camera: A Survey of Historical and Contemporary Techniques

This course covers the fundamentals of view camera photography by utilizing the 4x5 large-format camera. Through exploration of traditional view camera subjects architecture, landscape, still life and portraiture students learn view camera movements, exposure, sheet film processing, color film use, film scanning, and large scale inkjet printing. Historical printing processes, including salted paper, calotype, cyanotype, tintype and platinum/palladium, are examined as a complement to contemporary methods. Emphasis is placed on the view camera as a tool for documentation, narration and expression supplements consideration of the mediums technical aspects.

Prerequisite: PHOTO 101 or GRAPH-204 or PHOTO-302

PHOTO-307 (Formerly ARCH-307) 3-0-3
(writing intensive)

History of Photography

Since its invention in 1839, photography has played a pivotal role in the formation of modern visual culture. Focusing upon chronological, thematic and technological developments, this course investigates the diverse expressions and applications of the photographic image within a nexus of philosophical, social, economic, scientific and aesthetic contexts. Particular emphasis is placed upon: debates concerning the nature and function of images; the medium's impact upon portraiture, high art, popular culture, fashion and social documentation; and the rise of photojournalism and advertising. Photography as a discrete language of signs, symbols and metaphors with implied narratives is emphasized.

Prerequisite: WRTG-2XX

PHOTO-381 (Formerly G993) 0-0-3
Independent Study in Photography

Independent Study in Photography is a one term student-initiated project limited to those students who have finished the full sequence of photography courses. A student proposes a project and works independently with guidance from the instructor.

Prerequisite: Permission required. See appropriate form on-line at the University Registrar's webpage www.philau.edu/registrar/ for more information.

PHOTO-436 (Formerly ARCH-436) 2-2-3
Historic Preservation Documentation: Photography

Begun in 1933, the Historic American Building Survey (HABS) is the first federal preservation program established to document America's architectural heritage. In this course students learn the fundamentals of HABS documentation methods for the production of archival records of historic structures and places, utilizing the 4 x 5 large-format camera. Through field work and labs, students photograph, print, research and narrate comprehensive, technically proficient photographic essays that represent the salient aspects of historic structures, complexes and sites in accordance with HABS standards.

Prerequisites: ARCH-421 or PHOTO-101 or PHOTO-204

PHYS-101 (Formerly L313) 3-2-3
General Physics

(for non-science majors)

The basic laws of mechanics and thermodynamics are covered. The emphasis will be on understanding the major laws of physics and the way they manifest themselves in practical applications and in laboratory experiments. The areas of importance for architecture and interior design, such as sound and illumination, are discussed.

Prerequisites: MATH-100 or MATH-101 or MATH-102 or MATH-103 or MATH-111

PHYS-201 (Formerly L325) 3-0-3
Physics I: Mechanics and Heat

(required for science and Engineering majors)

A calculus-based course emphasizing Newton's three laws of motion and the conservation laws of energy, linear

momentum and angular momentum as first integrals of the dynamics. Additional topics in mechanics include stress and strain, simple harmonic motion and hydrostatics. Absolute temperature scales, thermal expansion, specific heats, methods of transfer of heat energy, ideal gases and real gases are considered before studying the first and second laws of thermodynamics, with the concept of entropy emphasized in the latter.

Prerequisite: MATH-111

Co-requisite: MATH-112, PHYS-201L

PHYS-201L (Formerly L325) 0-3-1

Physics I: Mechanics and Heat Laboratory

In this one-credit laboratory course students perform, analyze and submit lab reports based on experiments which test the theories developed in Physics I: Mechanics and Heat and they take quizzes based both on the lab instructions and material from the lectures.

Co-requisite: MATH-112, PHYS-201

PHYS-203 (Formerly S116) 3-0-3

Physics II: Waves, Electricity, Magnetism and Light

The mathematical representation of traveling sinusoidal waves and standing-wave patterns is emphasized. Applications are made to sound waves. Electrostatics include Gauss's law, electric potentials and the potential gradient equation. The field concepts are used to interpret elementary D.C. circuits including Kirchhoff's Rules. Capacitors as circuit elements and dielectrics are also studied. The effects of the magnetic field, its sources, induced EMFs and magnetic materials are considered. Series AC circuits conclude electromagnetism. Geometric optics includes lenses, mirrors and optical instruments. Physical optics includes interference and polarization of light waves.

Prerequisites: PHYS-201 and PHYS-201L

Co-requisite: PHYS-203L

PHYS-203L (Formerly S116) 0-3-1

Physics II Laboratory: Waves, Electricity, Magnetism and Light

In this one-credit laboratory course students perform, analyze and submit lab reports based on experiments which test the theories developed in Physics II: Waves, Electricity, Magnetism and Light. They take quizzes based both on the lab instructions and material from the lectures.

Co-requisite: PHYS-203

Prerequisites: PHYS-201 and PHYS-201L

PHYS-314 (Formerly S114) 3-0-3

Elements of Quantum Mechanics

The experimental background of quantum mechanics is reviewed before its postulates are introduced, and the theory is used to solve one-dimensional examples including the harmonic oscillator, then — in three dimensions — the hydrogen atom, electron spin and atomic spectra. Applications to chemistry are stressed.

Prerequisites: MATH-225, PHYS-201

PRINT-101 (Formerly T938) 1-5-3

Introduction to Print Design

This course introduces the basic concepts and processes of analog and digital printing methods. Students will learn the hands on process of screen-printing as well as the technical process of large format digital printing. This class explores the use of printing as a vehicle for both creative expression and visual communication.

Prerequisites: ADFND-102, DSGNFND 203 or INDD-102. This course is closed to all Textile Design majors.

PRINT-301 (Formerly T740) 1-5-3

Printing Practices

This course introduces production of printed textiles by hand-screen and digital fabric printing methods. Students will learn a technical process of color separations, screen making and printing in both digital and conventional (hands-on) modes. Integration of digital and hands-on printing are encouraged toward the end of the course. The main focus is placed on aesthetics of color and styling in textile design on fabric. Sketchbook study will be required to document design processes, ideas and drawings.

Prerequisite: PRINT-303

PRINT-303 (Formerly T705) 1-5-3

Print Design Studio I

Techniques, materials, tools and basic information needed for the design on paper of printed fabrics for the apparel and home furnishing fields are studied. Hands on approaches with gouache and watercolor are used to prepare colorway and repeats. Students prepare a portfolio and learn to keep a sketchbook. A brief introduction to printing methods is included.

Prerequisite: DRAW-303 Advanced Drawing: Materials & Techniques and VSDES-101 and Admission to the Textile Design Program or by permission of program director.

PRINT-305 (Formerly T745) 2-2-3

Textile Printing Technology

The theory and practice of all aspects of industrial printing techniques are presented in a lecture/demonstration/lab format. Cloth preparation and finishing, machinery, dyestuffs and various print styles are included. This course offers practical background knowledge to students with primary interest in textile design, styling, marketing, quality control and textile manufacturing.

PRINT-315 (Formerly T706) 1-5-3

Print Design Studio II

This course focuses on creative use of CAD in surface patterning, which integrates with hands-on design applications that students acquired in PRINT-303 Print Design Studio I. Digital workflow, which includes scanning croquis, designing pattern on CAD, digital color matching and color ways will be introduced. At the same time, strong emphasis is placed on making croquis, which develop from drawings and paintings in the sketchbook. Students will create printed textile designs and patterns for Jacquard designs on paper with digital printers for apparel and home furnishing fields. Throughout

the semester, sketchbook study will also be required to document the working process, as well as drawings and paintings.

Prerequisite: A grade of "C" or better in PRINT-303

PRINT-331 (Formerly T707) 1-5-3
Print Design Studio III

Advanced course to give students further necessary experience in developing and producing creative designs for special markets, end uses and fabrics. Market research is required before projects are begun.

Prerequisite: PRINT-315

PSYCH-101 (Formerly H801) 3-0-3
Introduction to Psychology

This course is an introduction to the methodology, concepts, principles and issues in the study of behavior. Topics to be covered include: the biological bases of behavior; sensory and perceptual processes; learning, memory and cognition; motivation and emotion; personality, psychopathology and psychological approaches to therapy; and social interactions. This course is a requirement for enrollment in all higher-level psychology courses.

PSYCH-103 (Formerly H881) 3-0-3
Physiological Psychology

This course will expand upon the biological bases of behavior. An emphasis will be placed on the relationship between the brain and behavior. Topics will include synthesis of neurotransmitters, an introduction to drugs and behavior and neural substrates that underlie behaviors.

Prerequisite: PSYCH-101

PSYCH-201 (Formerly H823) 3-0-3
Abnormal Psychology

Students will consider of the various classifications and symptomatology of psychopathological disorders – their origin, assessment, prognosis, treatment and prevention.

Prerequisite: PSYCH-101

PSYCH-210 (Formerly H825) 3-0-3
Forensic Psychology

Students will examine the interplay between the disciplines of psychology and law. The course will examine the psychological and behavioral issues that impact the legal and criminal-justice systems, and how law and justice affect human behavior. Topics to be covered include crime and criminal behavior, victims, law enforcement, trials, witnesses, mental illness and criminal justice, corrections, family law, crime intervention and prevention.

Prerequisite: PSYCH-101

PSYCH-211 (Formerly H861) 3-0-3
Learning Theory

Students will study the acquisition, activation, direction and retention of human and animal behavior. Topics to be covered include instincts, drive, conditioning and instrumental learning, human verbal learning and language learning and memory processes.

Prerequisite: PSYCH-101

PSYCH-212 (Formerly H862) 3-0-3
Cognitive Psychology

Study of human thinking, memory, problem solving and the relationship between damage to the cortex and information processing. Empirical research and applied examples and demonstrations will be presented to address such topics as the content of memory, memory improvement, strategies and approaches for solving different kinds of problems, and pathologies and problems of thought.

Prerequisite: PSYCH-101

PSYCH-213 (Formerly H870) 3-0-3
Developmental Psychology

Students will analyze the process of human development and change throughout the lifespan. Research on both humans and animals will be presented to promote understanding of human physical, social, emotional and cognitive development. Topics include prenatal and postnatal development, issues and theories of human development, genetic influences and personality and issues related to the aging process.

Prerequisite: PSYCH-101

PSYCH-214 (Formerly H863) 3-0-3
History and Systems in Psychology

Students will study the historical development of significant psychological concepts, theories and systems. The focus and far-ranging content of this course serves to provide an overall synthesis of the major subfields of psychology.

Prerequisite: PSYCH-101

PSYCH-220 (Formerly H812) 3-0-3
Clinical Psychology

This course will provide students with an opportunity to use current theories to address individuals with mental-health issues. Topics will include professional duties and skills of the clinical psychologist, treatment procedures and resources and the diagnosis and management of common psychological disorders. Emphasis will be placed on humanistic and behavioral theories of etiology, treatment and the enhancement of psychological well-being.

Prerequisite: PSYCH-201

PSYCH-221 (Formerly H822) 3-0-3
Personality Theory

This course is a survey and comparative analysis of the major representative theories of personality, both traditional and contemporary. Special topics such as the effects of genetic predisposition, physical status and environmental factors on personality configurations will also be discussed.

Prerequisite: PSYCH-101

PSYCH-222 (Formerly H824) 3-0-3
Counseling Psychology: Theories and Principles

This course provides an overview and general understanding of the field of counseling psychology. The course is designed to familiarize students with the basic concepts, interventions, scientific research, professional practices and contemporary issues of the profession of counseling psychology. Students will learn a variety of theoretical approaches and

psychotherapy techniques to counseling, including psychoanalytic, behavioral, cognitive and humanistic approaches. The course contains both didactic and skill application to encourage competency in the performance of counseling skills.

Prerequisite: PSYCH-201

PSYCH-223 (Formerly H826) 3-0-3
Marriage and Family

This course is a survey of family systems and theories underlying marriage and family counseling. The course will explore the history of marriage, the choosing of a partner, parenting styles, and issues that create marital discord and divorce. Specific course objectives are to provide information about the therapeutic process and the practical elements of counseling interactions with families, to identify differences between individual- and system-oriented therapies, and to encourage the integration of theoretical and experiential learning.

Prerequisite: PSYCH-101

PSYCH-224 (Formerly H888) 3-0-3
Psychology of Addiction

This course is a survey of current psychological theories of the addiction process and treatment modalities based on each. Physiology and neurobiology will be considered, but are not the primary focus of the course. Theoretical models include: the disease model, psychoanalytic formulations, conditioning theory, social-learning theory, family-systems theory and the opponent-process model. Sociocultural perspectives, including deviance theory, will also be discussed.

Prerequisite: PSYCH-101

PSYCH-230 (Formerly H831) 3-0-3
Industrial Organizational Psychology

Students will study the more recent methods in testing, interviewing and selection of workers. Training, motivation, performance appraisal, job satisfaction, morale, job analysis, decision making, leadership and organization theory are other topics discussed.

Prerequisite: PSYCH-101

PSYCH-231 (Formerly H832) 3-0-3
Psychological Assessment

This is a methods course concerning the basic concepts and techniques of psychological assessment tools (tests) as they are used in the profession if psychology in employment, school, clinical and medical settings. Emphasis will be placed on understanding test design, or what goes into a test, as well as understanding test scores and profiles, or what comes of a test. Many specific tests will be highlighted throughout the course to help students appreciate psychological tests and become aware of their functions and limitations.

Prerequisite: PSYCH-101

PSYCH-232 (Formerly H851) 3-0-3
Social Psychology

Students will study the experimental analysis of the individual as subjected to the social influence of other individuals or social groups. Topics to be covered include persuasion,

conformity, aggression, altruism, prejudice and interpersonal attraction and an analysis of the research methods used to study these behaviors.

Prerequisite: PSYCH-101

PSYCH-233 (Formerly H853) 3-0-3
Interpersonal Relations and Small Group Dynamics

This course is designed to provide a theoretical and experiential exposure to group formation, group process and group dynamics, as well as to interpersonal relationships within and between groups.

Prerequisite: PSYCH-101

PSYCH-240 (Formerly H880) 3-0-3
Comparative Psychology

This course will provide a survey of the study of animal behavior as related to psychology. Students will become familiar with approaches, fundamental concepts and contemporary research findings of the field. Topics include patterns and development of behavior in animals, neural and hormonal influences, animal learning and cognition and the evolution of behavior.

Prerequisite: PSYCH-101

PSYCH-241 (Formerly H883) 3-0-3
Psychopharmacology

Students will study the basic principles of drug action in the central nervous system. Topics will include effects of stimulants, depressants, intoxicants and drug abuse on behavioral function. The clinical use of drugs in the treatment of psychological and psychiatric disorders will be discussed.

Prerequisite: PSYCH-103

PSYCH-242 (Formerly H884) 3-0-3
Sensations and Perceptions

Sensations refer to information about the environment gathered through the senses. Perception is the process by which sensory information is interpreted and made meaningful. This course will provide a survey of the study of sensation and perception from structural, functional and cognitive viewpoints.

Prerequisite: PSYCH-103

PSYCH-243 (Formerly H885) 3-0-3
Human Sexuality

This course involves a rigorous examination of the biological, behavioral and mental aspects of human sexuality. Among the topics to be studied are anatomy and physiology, conception and contraception, sex roles, love, sexual communication, sexual dysfunctions and social issues such as pornography.

Prerequisite: PSYCH-101

PSYCH-322 (Formerly H804) 2-2-3
Introduction to Experimental Psychology

This course introduces psychology as an experimental science in which hypotheses are generated and tested. Major topics will include various types of experimental designs, subject selection and randomization. Students will be

introduced to various data collection methods and research designs specific to the different branches of psychology.

Prerequisite: STAT-321

PSYCH-371 (Formerly H896) 3-0-3
Selected Topics in Psychology

An in-depth consideration of a particular topic, issue or problem in psychology that is of special interest to students and faculty. Recent sections have discussed topics such as educational psychology, psychosexual development and the psychology of trauma. Topic selection will be done in advance of registration.

Prerequisite: PSYCH-101

PSYCH-381 (Formerly H899) 0-0-3
Independent Study in Psychology

For further details, see general description of Independent Study in "Academic Policies" section. Permission required. See appropriate form online at the University Registrar's webpage www.philau.edu/registrar/ for more information.

PSYCH-391 (Formerly H890) 2-2-3
Advanced Research in Psychology

(writing intensive)

This course will involve an in-depth exploration of research methods in psychology. Students will conduct an original research project individually or as part of a research team. Through this course, students will apply their psychological training to designing, conducting, analyzing, discussing and presenting their own research project.

Prerequisites: PSYCH-322 and completion of at least 21 credits in psychology courses

PSYCH-410 (Formerly H805) 3-0-3
Senior Colloquium in Psychology

This course is a senior-level seminar dealing with current controversial issues in psychology. Students will perform a search of the scientific literature on issues chosen from a list provided by the instructor and organize, analyze, orally present and discuss material with the class. Finally, students will propose a question generated from this activity and design a research structure to answer it.

Prerequisites: PSYCH-391

PUBH-101 3-0-3
Introduction to Public Health

This is the foundation course of the Public Health major and provides students with a general overview of principles of public health. The course explains and draws from the interdisciplinary focus of public health theory and practice. Presented will be the concepts of health, population health and the structure and activities of modern public health systems. The major determinants of health, the causes of disease and concepts of disease control and prevention are discussed.

PUBH-201 3-0-3
Introduction to Epidemiology

Epidemiology is the fundamental science of public health. This course presents basic principles of epidemiology

including concepts of time, place and person in disease occurrence, disease causality, disease rates, sensitivity and specificity and epidemiologic data analysis. Reviewed are the applications of epidemiology to infectious and chronic diseases, occupation, the environment and health services delivery. Included are the basic types of observational and experimental studies as they relate to human diseases and key concepts in epidemiologic methods such as bias and confounding.

Prerequisites: MATH-100 or 101 or 102 or 103 or 111

READ-099 3-0-(3)
Fundamentals of College Reading and Study Skills

This course is designed to improve reading and study skills at the college level. Its main focus is on developing strategies that will be effective in other content courses. Students complete assignments in academic reading, note taking, vocabulary development, review techniques and critical reading skills.

Students must earn a "C" or better to receive credit for fundamentals courses. See "Fundamentals Courses" in the section "Academic Policies." Students required to take READ-099 must not register for HIST-11X in the same semester.

READ-098ESL 3-0-(3)
ESL: Fundamentals of College Reading and Study Skills

This course is designed for students who did not learn English as their first language. Its main focus is on developing effective academic reading strategies, expanding vocabulary and reading a wide variety of academic texts to help in preparing for the required reading in other content courses. Students must earn a "C" or better to receive credit for fundamentals courses. See "Fundamentals Courses" in the section "Academic Policies." Students required to take READ-099ESL must not register for HIST-11X in the same semester.

SCI-101 (Formerly L121) 3-2-3
Environmental Science

Environmental Science is the study of how humans and the natural environment interact. Critical issues that affect our daily lives such as clean drinking water, urban renewal, energy availability, pesticides, global warming, acid rain and recycling are explored from social, ecological, chemical and political perspectives. Students will tackle a real-life environmental problem in a professional manner using critical thinking and analytical skills, library research skills, teamwork and presentation skills.

SCI-102 2-3-3
Exploring Science

(for non-science majors)

This hands-on science course delves into public health issues. Field and laboratory sessions focus on data analysis based on issues from students' daily lives which leads to an examination of alternatives. How do you quit smoking? What is in the water you drink and the food you eat? The course culminates in a project that explores the historical, political, and environmental aspects of an unsolved scientific problem and presents the findings to a regional scientific agency.

SCI-108 2-3-3**Sustainability & Eco-Innovations**

The emerging fields of sustainability and environmental sciences will be surveyed to highlight how entrepreneurs are capitalizing on rapid environmental transformation. The rate, scale and degree of global environmental change, key scientific feedback loops the regional differences in terms of impacts and opportunities will be analyzed. Case studies of eco-innovation strategies employed by businesses and designers will be explored so that students can create their own scientific monitoring and evaluation plan for implementing a simple eco-innovation.

SCI-300 3-0-3**Basic Pharmacology**

This course introduces the student to the basic principles of pharmacology including pharmacokinetics and pharmacodynamics. The course will cover frequently prescribed medications, their uses, actions and common side effects. The student will learn about the various drug classification systems, as well as the effects of those drug classes on specific patient populations, and the process of preventing medication errors deriving from the use of pharmacologic agents.

Prerequisites: BIOL-104 and BIOL-104L, CHEM-104 and CHEM-104L

**SCI-381, SCI-382 (Formerly C281, C282) 0-0-3, 0-0-3
Independent Study I & II in Science**

Students interested in pursuing independent study in science must submit a proposal to the academic associate dean of undergraduate programs in the College of Science, Health and the Liberal Arts for approval at least two weeks before pre-registration. Detailed guidelines for development of the proposal may be obtained from the College.

Permission required. Also see appropriate form online at the University Registrar's webpage <http://www.philau.edu/registrar/> for more information.

**SCI-399 (Formerly STUAB-300, S464) 1-6-4
Selected Topics Study Abroad in Science**

International experience is invaluable in all scientific disciplines and strongly encouraged by the College of Science, Health and the Liberal Arts. Students will collect, analyze and present data in a scientific discipline both in the host country and to the Philadelphia University community. All students will have assignments and immersion in the cultural, social, environmental and historic foundations of the host country.

Prerequisites: 2.50 G.P.A., completion of two required college studies science courses (SCI-101, SCI-102, BIOL-101, BIOL-103, CHEM-101, CHEM-103, PHYS-101 or PHYS-201) or permission of the instructor, and successful completion of the Study Abroad application and policy guidelines process. This course is eligible for an Honors upgrade.

**SCI-493 (Formerly S791) 0-0-(3 or 6)
Science Internship**

A professional internship provides an opportunity for professional experience supporting application and further

development of the knowledge gained in the classroom. Under faculty supervision, students work in positions related to the major, minor and/or career goal, develop learning objectives and complete reflective academic assignments. Students should be exposed to a broad spectrum of professional practice, particularly those not available in the academic setting, and are expected to make a professional contribution to their employer.

Prerequisites: 2.5 G.P.A., completion of 60 credits, and permission of the Internship Program director. Additional requirements may apply. See "Internship Program" section for further information.

SERVE-101 0-1-1**Civic Engagement: Serving and Learning in Philadelphia**

Through the completion of a 10-hour service project, online journaling, attending four class meetings, and participation in a service-learning showcase, students will serve the greater Philadelphia community in an area of interest and explore the reciprocal nature and responsibility of citizenship for the individual and community. This course may be taken in place of the two-course physical education requirement, and it may be taken an additional three times for free elective credits.

SOC-201 (Formerly L362) 3-0-3**Class, Gender and Race in World Societies**

A study of theories, concepts and methods of social science, this course focuses on the nature of economic, racial and sexual stratification in the United States and around the world. The course is designed to enable one to understand and to be able to use social science to analyze and influence situations and environments.

Prerequisite: WRTG-101, HIST-1XX

SOC-204 (Formerly L363) 3-0-3**Personality and World Cultures**

This course is an introduction to the social sciences through the focused study of personality and culture. Material will illustrate quantitative and qualitative methods of social-science research. Students will explore concepts, theories and research representing psychological and anthropological approaches, using both classic and contemporary texts. Students will gain an appreciation of cross-cultural variability in personality.

Prerequisite: WRTG-101, HIST-1XX

SOC-208 (Formerly L364) 3-0-3**The Individual and the Global Environment**

This course will introduce students to the social sciences by focusing upon issues in the environment. By examining goals of the new environmentalism, by direct individual and community involvement and by understanding the present state of the world and future trends, the student will have the skills to prepare for a sustainable society, a society that satisfies its needs without jeopardizing the prospects of future generations.

Prerequisite: WRTG-101, HIST-1XX

SOC-211 (Formerly L366) 3-0-3
Power and Poverty in the Global Economy

The course will emphasize the intersection between global political relations and global economics, and how the two together impact social relations worldwide. Various complementary and competing political and economic perspectives (from capitalist to socialist) will be used to address recent trends in the development of a global economy, international trade, the formation of regional blocs such as NAFTA and the EU, and north-south political/economic relations.

Prerequisite: WRTG-101, HIST-1XX

SOC-225 (Formerly L367) 3-0-3
Global Politics

This course provides an overview of the forces that are shaping international politics and economics. This course will help students understand the roles of international institutions such as the United Nations, the World Trade Organization and the International Monetary Fund, as well as non-governmental actors such as Amnesty International and al Qaeda. Students will also examine the process of economic globalization in order to understand its varying impacts on different world regions.

Prerequisites: WRTG-101, HIST-1XX

STAT-201 (Formerly B151) 3-0-3
Statistics I for Business

Descriptive statistical measures and probability theory are combined to provide the basis for statistical decision-making techniques. Areas covered will include data presentation; measures of central tendency; measures of variability; basic probability laws, Bayes' theorem; binomial; Poisson; "t," and normal distributions; confidence intervals; and hypothesis testing.

Prerequisite: Quantitative Reasoning I

STAT-202 (Formerly B152) 3-0-3
Statistics II for Business

Review of sampling distribution, confidence intervals and hypothesis tests for two-samples; simple linear regression, multiple linear regression with emphasis on computer output; one- and two-way analysis of variance; application of the Chi-square statistic; and non-parametric statistical techniques.

Prerequisite: grade of "C" or better in STAT-201

STAT-221 (Formerly H802) 3-0-3
Psychological Applications of Statistics I

This course will present an introduction to descriptive statistics and the basis for statistical decision-making techniques. Methods for analyzing experimental data will be presented so students can gain an understanding of statistical procedures commonly used in psychological research. Topics to be covered include the presentation of data, probability, measures of central tendency and variability, correlation and an introduction to hypothesis testing.

Prerequisite: PSYCH-101

STAT-301 (Formerly S466) 3-0-3
Biostatistics

This course will cover principles of experimental design and statistics for biologists in environmental and medical fields. Hypothesis testing; data collection and sampling; data analysis and graphing; univariate; bivariate and multivariate analysis including regression and ANOVA will be covered. Students will design an experiment and compare and contrast the results of several different statistical approaches to data analysis and interpretation.

Prerequisite: grade of "C" or better in either MATH-111 or MATH-112

STAT-321 (Formerly H803) 3-0-3
Psychological Applications of Statistics II

This course will expand on fundamental topics covered in Psychological Applications of Statistics I and will cover advanced topics such as two-sample hypothesis testing, correlation, analysis of variance, regression and various non-parametric statistics. Particular emphasis will be placed on the interconnection between experimental design in psychology and statistical principles.

Prerequisite: STAT-221

STUAB-300 (Formerly T100) 0-0-(3-12)
Textile Studies Abroad

Students have the opportunity to study in international textile schools. The School of Design and Engineering should be contacted for further information.

Prerequisites: junior status, 2.50 G.P.A.

STUAB-300 (Formerly B100) 0-0-(4-6)
International Business Studies Abroad

International Business majors are required to study abroad an equivalent of four to six credit hours. The location must be consistent with the foreign language studies chosen. The study abroad may be in the form of an internship or studies at an international university or college. Students must apply for and coordinate their study abroad through the International Business coordinator. A minimum of six months is usually required between the application and the actual study abroad.

Prerequisites: equivalent of semester-three language proficiency (Intermediate Low of the ACTFL proficiency standard) in a second language and permission of the International Business program coordinator.

STUAB-300 (Formerly A100) 0-0-(3-12)
Architecture/Design Abroad

Contact the College of Architecture and the Built Environment, or the College of Design, Engineering and Commerce for further information.

Prerequisites for Architecture: 2.00 G.P.A., grade of "C" or better in both ARCH-311 and ARCH-312; or grade of "C" or better in INTD-302, and permission of both the study abroad director and program director

Prerequisites for Design: DSGNFND-103, ADFND-101 or INDD-101 Cannot be taken as a replacement for WEAV-201.

- STUAB-301** **0-0-3**
Study Abroad Project Documentation
 This course will be a vehicle for students to analyze and document their study abroad experience and then share it with the university community. Similar to an independent study, students will be required to keep a journal while abroad. When they return, they will document their individual academic and personal experience as well as working on group projects to produce a public exhibition.
Prerequisites: STUAB 300
- SUST-100** **3-0-3**
Introduction to Sustainability
 As the gateway to the Environmental Sustainability major, this course introduces students to the core concepts of sustainability theory and practice. Students will explore the ethical principles, social structures, technologies and political and economic processes necessary for humans to live sustainably in community with each other, other species and our natural environment.
- SUST-120** **3-0-3**
Sustainable Food Chains
 This course examines one of the most fundamental sustainability challenges that we will face this century: how to feed 9-10 billion people without depleting the planet's soils, water supplies, oil resources and biodiversity. Sustainable Food Chains explores the environmental impact of modern industrial agriculture and examines alternative approaches to food production that reduce the use of non-renewable resources, respect natural processes and work in harmony with local ecosystems, communities and economies.
- SUST-121** **3-0-3**
The Environment and World Cultures
 Global religions, cultures, and philosophies, both past and present, have interpreted the relationship between human society and the natural environment in a variety of ways. In this course students will study attitudes towards the environment, its protection, and sustainability through the lenses of several major religions and philosophies, and will compare how these worldviews offer differing perspectives on the role of "Nature" in everyday life.
- SUST-200** **3-0-3**
Energy Systems and Politics
 The rising international demand for fossil fuels, the increasing concerns about dwindling energy reserves and the growing evidence of climate change are combining to accelerate the search for alternative energy sources. This course will analyze the environmental, economic and political dynamics of the existing energy regime and help students evaluate the potential and drawbacks of possible energy alternatives.
Prerequisites: HIST-1XX
- SUST-202** **3-0-3**
Economics of Sustainability
 This course introduces students to general economic theory and how it can be applied to the analysis of sustainability issues. Topics include the economics of sustainable development, cost-benefit analysis related to environmental initiatives and the evaluation of policies for more sustainable production and consumption.
Prerequisites: HIST-114
- SUST-204** **3-0-3**
Sustainable Planning & Land Use
 This course examines land use and urban planning questions from the perspective of sustainability. Topics include "smart" growth/development, wilderness conservation, community activism, environmental justice, brownfield and grayfield redevelopment, greenfield preservation, zoning for mixed-use neighborhoods, mass transit planning, and transit-oriented development (TOD).
Prerequisites: WRTG-101, HIST-1XX
- SUST-300** **3-0-3**
Sustainable Technologies for Architecture
 This course provides students with the skills and vocabularies to converse and enhance their ability to collaborate with professionals. This course is intended as an introduction to sustainable architecture and its technologies that are typically used in practice.
Prerequisite: SUST-204
- SUST-302** **3-0-3**
Industrial Ecology
 Industrial Ecology is the study of how industrial processes affect the environment. Students will learn approaches and tools to evaluate products, processes and systems in their entire life-cycle, including: material flow analysis, design for environment, input-output analysis, life-cycle assessment, industrial symbiosis and sustainable consumption.
Prerequisites: 2 courses from the Science Group and WRTG-21X
- SUST-303** **3-0-3**
Global Environmental History
(writing intensive)
 Global Environmental History allows students to develop a historical perspective on the relationship between human societies and the natural environments that surround and support them. As this course illustrates, some societies have succeeded in living in balance with local ecosystems, and some have failed. By analyzing these historical examples, students learn how various cultural, economic and political factors can combine to produce an environmentally sustainable society or a catastrophic ecological collapse.
Prerequisites: SOC-2XX
- SUST-400** **3-0-3**
Sustainability and Development in the Non-Western World
 This course examines sustainability issues in such non-European nations as China, Mexico, Brazil and Ghana. It looks at how local economic and cultural factors help shape sustainability strategies and examines the relationship between economic development and sustainability in a comparative framework.
Prerequisites: SOC-2XX

- SUST-402** **3-0-3**
Managing Sustainable Organizations
 This course answers the question, "How can we effectively manage sustainability in organizations?" The course uses contemporary readings, research, cases, and student projects to explore current and future approaches to sustainability within the context of management and organizations both within and beyond the traditional management framework of planning, organizing, leading and controlling.
Prerequisite: MGMT-301 and one Junior Seminar
- SUST-421** **3-0-3**
Environmental Policy
 Environmental problems are essentially social, economic and political problems. This course traces the evolution of environmental policy, legislation, and regulations, both in the U.S. and worldwide, including the background and context of environmental policymaking. Students will also examine the substantive problems and political process of environmental movements, and contemporary environmental thought with regard to issues of sustainability and environmental justice.
Prerequisites: SOC-2XX and one junior seminar.
- SUST-498** **3-0-3**
Environmental Sustainability Capstone Seminar
 This capstone course for the Environmental Sustainability degree program uses case studies and a real-world project to review and integrate the skills and knowledge developed in the previous courses in the Environmental Sustainability curriculum. Applying the principles of systems thinking and other analytical tools, students solicit, develop, present, and implement a client-based sustainability initiative.
Prerequisites: SUST-402
- TENGR-306** **3-2-3**
Textile Engineering I (Linear Assemblies – Fibers & Yarns)
 The molecular structure and morphologies of fibers are explored. The physical, chemical and mechanical properties and behavior of fibers is studied. Fiber-production processes are reviewed. An examination of systems employed in conversion of fibers into textile structures is conducted. Relationships between material/process constraints and product functional quality are analyzed. The laboratory explores the methods of evaluating fiber and yarn properties.
Prerequisites: PHYS-203 and CHEM-103
- TENGR-308** **3-2-3**
Textile Engineering II (Planar Assemblies)
 Basic and complex designs. Multiple layer, tubular and near net shape structures. Use of dobby and Jacquard. Development and visualization of woven and knit fabric structures using CAD. Tensile, shear and bending characteristics of woven and knit fabrics. Effect of uniaxial and biaxial forces acting on fabrics. Effect of Poisson's ratio. Fabric drape and formation of double curvatures. Fabric surface characteristics.
Prerequisite: TENGR-306
- TENGR-310** **3-2-3**
Textile Engineering III: Nonwovens and Chemical Processing
 This lab-based course will focus on the production and evaluation of nonwoven fabrics, including web forming and bonding methods, and on coloration techniques, including dyeing and printing, as well as aesthetic and functional finishing.
Prerequisites are: TENGR-308 and CHEM 103
- TENGR-320** **3-2-3**
Textile Engineering IV: Advanced Fibrous Materials
 Mechanics and processes for producing functionally advanced fibrous materials. Architectural, aerospace, recreational and biomedical application of textiles. Concepts of advanced fiber composites will be covered.
Prerequisite: TENGR-310
- TEXT-101 (Formerly T101)** **3-1-3**
Survey of Textile Industry
 Introduction to the language and process flow of fibers through finished products. Topics include fiber classification, formation and variants; spun and filament yarn processing, numbering systems, texturing and novelty yarns; woven, knit and nonwoven fabric formation, processing equipment and basic design elements; printing, dyeing and finishing processes; product evaluation; as well as government legislation related to textiles. A laboratory experience provides support for the lectures.
- TEXT-104** **2-2-3**
Fiber and Yarn Studies
 This course introduces the basic knowledge of fiber and yarn technology. Included are the proper use of fiber/yarn terms and definitions, the construction parameters of the various fiber and yarn types and detailed analysis of performance properties of each. This information is then used in the proper selection of fibers and yarns for various fabrics and ultimately for various end use products in apparel, household and industrial applications.
- TEXT-113 (Formerly T301)** **4-2-4**
Yarn
 The processes necessary for the manufacture of continuous filament, staple, novelty, bulk and stretch yarns are studied. Staple yarn manufacture, including the processing of natural and man-made fibers on the carded cotton, combed cotton, woolen and worsted staple yarn manufacturing system is covered. Quality-control procedures are emphasized. The laboratory experience exposes the student to all aspects of fiber to yarn formation.
Prerequisite: TEXT-101
- TEXT-201 (Formerly T255)** **2-2-3**
Textile Production I
 This course will focus on the following performance properties of textiles: strength, elongation, thermo-physiological comfort, sensorial-comfort body movement, aesthetic qualities, appearance, maintenance properties, and health/safety/protection properties. The process of achieving desired fabric properties through the use of appropriate

fiber-, yarn- and fabric-production technology will be analyzed through theoretical studies and production laboratory exercises.

Any student who has received credit for TEXT-113, WEAV-201, KNIT-201, and/or TEXT-321 may not take this course

Prerequisite: TEXT-101

TEXT-209 (Formerly T630) 3-0-3

Industrial Textiles

The study of the major industrial fabric applications, constructions and future trends. The performance requirements for each application will be related to the selection of industrial fibers, yarn and fabric constructions and fabric finishing, coating and laminating.

Prerequisites: TEXT-307

TEXT-219 (Formerly T253) 3-0-3

Textiles for Interiors and Architecture

Focuses upon the unique problems and considerations of servicing the residential and contract textile-products market composed of upholstered furniture, window/wall coverings, carpets/rugs and furnishing accessories. Special textile requirements mandated by government agencies, building codes and industry-performance standards for residential, public and institutional interior spaces are emphasized.

Prerequisite: TEXT-101

TEXT-301 (Formerly T256) 3-0-3

Coloring & Finishing

This lecture-based course will focus on coloration techniques, including dyeing and printing; as well as aesthetic and functional finishing. Any student who has previously received credit for PRINT-305 and/or TEXTCHM-242 may not take this course for credit.

Fall only.

Prerequisite: CHEM-101 & TEXT-101

TEXT-305 (Formerly T207) 2-2-3

Advanced Fabric Performance Evaluation

The objective evaluation of fabric-mechanical properties influencing hand and performance are explored. Comfort-contributing qualities, such as thermal conductivity and air permeability, are also addressed. The influence of fabric-mechanical properties on formability and seaming is assessed with special attention to their role in automated assembly.

Prerequisite: TEXT-307 or TEXT-331

TEXT-307 (Formerly T201) 3-2-4

Textile Materials

The interrelationship of fiber selection, yarn processing, fabrication and finishing parameters is used to predict and measure fabric performance for specific end uses. A laboratory experience in textile product evaluation provides practical application of theory. The impact of textile-related government regulations is also emphasized.

Prerequisite: TEXT-101 or TEXT-104

TEXT-313 (Formerly T763) 3-0-3

Textile Costing

The cost of materials, labor, overhead and waste is studied in relation to textile production and finishing. Case studies

illustrate cost systems used in textile mills. Interrelationships between labor, machines and facilities are analyzed to determine their relative importance in cost-reduction programs. Costing factors for domestic and imported fabrics are considered.

Prerequisites: WEAV-201, KNIT-201

TEXT-314 (Formerly T709) 0-0-3

European Textile Printing

A two-week study tour in the textile printing areas of France, Switzerland and Northern Italy introduces Textile Design and Textile Material Technology majors to the expertise of important European printers, screen engravers and studios in the areas of printed textile design, style, color and printing technology. Visits to the two important French historic textile museums and other related textile plants are also included.

Prerequisite: PRINT-315 or PRINT-301 or PRINT-305 or permission of the program director

TEXT-315 (Formerly T208) 1-4-3

Interior Fabric Performance

Evaluations of fabrics and materials intended for end use in home furnishings are covered in this course. The use of physical testing to predict performance potential is emphasized. The use of instrumentations in the evaluation of surface and color change is presented.

Prerequisite: TEXT-307

TEXT-316 (Formerly T767) 3-0-3

Textile Quality Management

Recently, quality has emerged as a formal management function — no longer restricted to manufacturing and operational areas, it now includes the design, purchasing and marketing processes. Through lecture, discussion and experientials, this course examines quality theory and practice — how a more sophisticated understanding of quality can lead to a strategic approach to quality management that is necessary to compete in today's global marketplace. Factors required for creating and maintaining a corporation's strategies and competitive edge are analyzed.

Prerequisites: MGMT-301; and WEAV-301 or KNIT-205

TEXT-317 (Formerly T811) 3-0-3

Textile Production Control

Production — its measurement and control — is studied through plant and equipment layouts, as well as equipment selection. Methods of managing people and the equipment to optimize production are discussed.

Prerequisites: WEAV-201, KNIT-201

TEXT-321 (Formerly T620) 2-2-3

Nonwovens

The methods of web formation, bonding, end-use and market potential for nonwovens are investigated. In the laboratory, dry-laid and wet-laid nonwovens are manufactured and later evaluated in the testing laboratory for their unique characteristics.

Prerequisite: TEXT-101

- TEXT-325 (Formerly T621) 2-2-3**
Fibrous Composite Materials
 Exploration of properties of various fibers and fibrous constructions as applied to composites; fabrication of fiber-reinforced composites; and analysis of properties of new materials and technology.
Prerequisite: MATH-112, ENGR-215
- TEXT-331 (Formerly T240) 3-0-3**
Apparel Fabric Performance
 The course focuses upon the dependent relationship of the raw materials, manufacturing processes and finishing techniques that influence the actual performance of apparel products. This will enable students to evaluate a garment's suitability for a specific end use when any fabric variable is altered or when a product's construction and composition is examined. Federally mandated and voluntary labeling requirements will be emphasized. This course cannot be taken for credit by students who have taken TEXT-307.
Prerequisite: TEXT-101
- TEXT-335 (Formerly T625) 1-4-3**
Nonwovens Fabrication and Design
 Experimentation in the methods of nonwoven web formation, bonding, end use and expanded market potential for nonwovens are investigated. In the design studio, students will conduct market research while concurrently developing design concepts through hands-on laboratory experience. Each student will create a collection of samples with a specified intention exercising knowledge of fiber and fabrication properties, aesthetic qualities and performance characteristics.
- TEXT-371 (Formerly T890) 3-0-3**
Special Topics in Textiles
 A topic of special interest to students majoring in Textile Design, or Textile Engineering Technology. The special topic will vary.
Prerequisites will vary.
- TEXT-381, TEXT-382 (Formerly T798, T799) 0-0-3**
Independent Study in Textiles I and II
 For details, see description of Independent Study in "Academic Policies" section.
Permission required. See appropriate form online at the University Registrar's webpage <http://www.philau.edu/registrar/> for more information.
- TEXT-391 (Formerly T295) 1-5-3**
Textile Design Research
 This course will focus on uses of various design resources such as museums, market information, color forecasts, trade shows, nature and current events to generate design ideas suitable for the student's concentration area. Active research will result in a written and illustrated sketchbook of ideas to be used in advanced studio course projects, as well as portfolio-suitable drawings and paintings.
Prerequisites: DRAW-303 and VSDES-101 and Admission to the Textile Design Program (TEXD.BS.DAY) or by permission of program director.
- TEXT-411 (Formerly T790) 1-0-1**
Seminar: Textile/Apparel Industry Issues
 Seminars will expose students to diverse views, as well as enable them to discuss broad issues that cut across several disciplines. New technology and processes, business ethics, industry forecasting and marketing innovations, as well as career information, are effectively presented in this format. One credit of Textile/Apparel Industry Issues is required for TD, TET, FD and FIM majors.
- TEXT-487N (Formerly TEXT-487, T290) 4-0-6**
Textile Engineering Technology Senior Project
(writing intensive)
 Design, development, manufacturing, research and other thought-provoking problems are presented. Students will work in teams to analyze information/data on numerous textile- or apparel-related problems. The final project will reflect the work previously conducted in the TET Option and will constitute the final submission to each student's digital portfolio.
Prerequisite: WRTG-2XX, completion of 12 credits in TET Option
- TEXT-489**
Textile Design Senior Seminar
 The capstone course for students within the Textile Design major during which the students will develop a professional portfolio in actual and digital formats and refine work for their final exhibition. Students' individual interests will guide market research and the resultant development of targeted lists of potential employers. Resumes, cover letters and promotional packets will be developed during the course of the semester.
Prerequisite: Senior status
- TEXT-493 (Formerly T791) 0-0-(3 or 6)**
Engineer & Textiles Internship I
 A professional internship provides an opportunity for professional experience supporting application and further development of the knowledge gained in the classroom. Under faculty supervision, students work in positions related to the major, minor and/or career goal, develop learning objectives and complete reflective academic assignments. Students should be exposed to a broad spectrum of professional practice, particularly those not available in the academic setting, and are expected to make a professional contribution to their employer.
Prerequisites: 2.5 G.P.A., completion of 60 credits, and permission of the Internship program director. Additional requirements may apply. See "Internship Program" section for further details.
- TEXT-499 0-12-6**
Textile Design Capstone
 Students develop projects independently and are required to demonstrate ability and understanding of textile design theory, processes and principles. The final project requires topic research, design exploration, development and final

professional presentation. Additionally, a resume, culminating portfolio and support materials will be developed.

Prerequisites: pre or co-requisite of two Textile Design Designated Electives

TEXTCHM-242 (Formerly C501) 4-2-4
Dyeing and Finishing
(writing intensive)

This course presents an overview of the wet processing of fibers, yarns and fabrics. Included are the preparation, dyeing and finishing of textiles. Some emphasis is placed on the chemistry and technology involved in these operations. Dyes are studied by their method of application and the primary substrates to which they are applied. Chemical, thermal and mechanical processes are discussed for both preparation and finishing of fabrics.

Prerequisite: CHEM-101 or CHEM 103, WRTG-101

TEXTCHM-338 (Formerly C116) 4-2-4
Organic/Textile Chemistry

Aliphatic, aromatic and heterocyclic compounds with emphasis on those syntheses and reactions that play a role in textile chemistry. Also includes the chemistry of carbohydrates and proteins, regenerated polymers, polymerization, synthetic polymers, the synthesis and chemistry of finishing agents and dyes. The laboratory portion illustrates basic techniques and reactions and the applications of textile chemistry.

Prerequisite: CHEM 103

VSDES-101 1-5-3
Visual Studies: Design

This Foundations level design course confronts the process and principles of design. Students learn studio practices and gain facility to use a variety of materials in order to foster a hands-on creative experience. Design students in this course will develop sensitivity to value and color relationships with strategies for their use. Projects will be short in duration with a succession of increasingly complex concepts. The primary aspect of the course is two-dimensional design with a short period of three-dimensional study.

This course should not be taken by students who have received credit for Design I or Design II in the School of Design & Engineering or the College of Architecture and the Built Environment

VSDRW-101 1-5-3
Visual Studies: Drawing

This drawing course emphasizes the understanding of space and alternative approaches for recording and expressing it. Much information in regard to drawing practice will be accumulated during this semester such as mark making skills, developing sensitivity to light and shade, experimentation with media and the use of color as an introduction to figure drawing.

*This course should not be taken by students who have received credit for DRAW 101 or DRAW 201 in the School of

Design & Engineering or the College of Architecture and the Built Environment.*

WEAV-201 (Formerly T451) 4-2-4
Weave Technology I

The structures and analysis of woven fabrics will be studied utilizing CAD, pick outs and laboratory assignments on industrial equipment. Weave structures will include plain, twills and satins (with their derivatives), color effects, textural effects (cords, etc.) and pile weaves. Fabric will be mathematically analyzed for weight, yarn size, fabric count and yarn crimp to specify fabric structure. Necessary loom controls (draw, chains and reed plans) will be used to relate lectures and laboratory work on dobby looms.

Prerequisite: TEXT-101 or TEXT-104 and Admission to the Textile Design (TEXD.BS.DAY) or Textile Materials Technology (TMT.BS.DAY) Programs or by permission of program director.

WEAV-207 (Formerly T440) 1-5-3
Weave Design Studio I

This course focuses on the effects and interactions that yarn, color, texture and structure play in woven design. Working with multi-harness floor looms, students create warps and chains, and weave prototype cloth for various end uses.

Prerequisite: WEAV-201 and VSDES-101

WEAV-226 (Formerly T420) 3-2-4
Jacquard

The principles and equipment involved in the design and production of Jacquard fabrics are studied. Students analyze, design and produce complex Jacquard fabrics on commercial equipment including computerized design and production systems.

Prerequisite: WEAV-201

WEAV-301 (Formerly T452) 4-2-4
Weave Technology II

The variations, function, auxiliary devices and design characteristics of cam, dobby and Jacquard weaving machines, and the equipment used to support the weaving process are studied; along with relevant calculations regarding time, materials and production of fabrics. The technique required to accurately analyze fabrics for all critical components and methods to design fabrics for specific weight and compact cover, with consideration given to yarn size, texture, fiber type, weave and other fabric parameters, will be learned. Advanced multi-layer weaves will be studied, analyzed and woven.

Prerequisite: WEAV-201

WEAV-307 (Formerly T441) 1-5-3
Weave Design Studio II

The study of elements of woven design is brought to the problems of multi-layered cloth, compound weaves, block designs and other advanced structures. Students use several CAD programs in conjunction with AVL compu-dobbies to increase their design capabilities. Multi-harness floor looms and dobby looms are also used to develop cloth from concept to actuality.

Prerequisite: A grade of "C" or better in WEAV-207

WEAV-327 (Formerly T442) 1-5-3**Weave Design Studio III**

Through an advanced study in woven-textile design, students develop a comprehensive working knowledge of the process of styling fabric for specific textile markets. Depending on the projects' parameters, students may use AVL compu-dobbies or multi-harness floor looms.

Prerequisite: WEAV-307

WEAV-401 (Formerly T478) 1-5-3**Introduction to Woven Design**

(for non-textile design majors)

This course focuses on the effects and interactions that yarn, color, texture and structure play in woven design, as they relate to a range of end use applications. Students will develop fabrics appropriate for their particular area of interest or major field of study. Using multi-harness looms, students will create and weave a variety of samples and prototype cloth.

WRTG-098ESL (Formerly H99ESL) 3-0-(3)**ESL: Fundamentals of College Writing**

This course is specifically designed for students who do not have English as their first language, and need additional preparation before taking WRTG-101 ESL: Writing Seminar I. The process of writing is emphasized, with pre-writing activities, planning, multiple drafting that receives peer and teacher feedback, and opportunities for revisions and editing. Beginning with paragraphs and expanding to multiple-paragraph essays, students learn to develop skills in supporting a controlling idea and in recognizing and correcting errors in grammar, punctuation, sentence structure and word usage. Students should only be placed in WRTG-098ESL after designated faculty members have evaluated a writing sample. Credits may not be applied toward graduation requirements. Students must earn a "C" or better to receive credit for fundamentals courses. See "Fundamentals Courses" in the section "Academic Policies."

WRTG-099 (Formerly H99) 3-0-(3)**Fundamentals of College Writing**

This course is designed for students who need additional preparation before taking WRTG-101, Writing Seminar I. Students who place into this course are given background information about the content of Writing Seminar I, which prepares them to read and write college-level academic prose. Students for whom English is a second language take an ESL version of this course. Credits may not be applied toward graduation requirements. Students must earn a "C" or better to receive credit for fundamentals courses. See "Fundamentals Courses" in the section "Academic Policies."

WRTG-100ESL (Formerly L111ESL) 3-2-3**ESL: Writing Seminar I**

This course parallels WRTG-101, yet is specifically designed for students whose first language is not English. As does WRTG-101, this course includes reading and discussion about a variety of texts that share a common theme. Writing assignments include at least three expository essays and a library research paper related to the theme. To be placed

in the course, students must either pass WRTG-098ESL or, after submitting a writing sample, be placed by a designated faculty member.

WRTG-101 3-0-3**Writing Seminar I: Finding Philadelphia**

This course is based on the idea that reading, writing and thinking within a specific context are crucial to successful college work. Students use writing to explore issues in contemporary Philadelphia's social and cultural contexts. Through reading, discussing and writing about full-length books and articles, students learn the rudiments of writing college-level academic papers. Honors and English as Second Language versions of this course are available.

WRTG-211 (Formerly L611) 3-0-3**Writing Seminar II: Business**

This course has been designed primarily for students of business. Students focus on critical reading, writing, thinking and researching in print, electronic, observation and interview formats. Students also consider economic, social and political perspectives as applied to workplace communication and their professions. Students produce individual and group projects, including oral and visual presentations, as they focus both on the process as well as the final products of their work.

Prerequisites: WRTG-101, HIST-1XX. May not be taken CR/NC.

WRTG-215 (Formerly L612) 3-0-3**Writing Seminar II: Design**

This course has been designed primarily for students of design. Students focus on critical reading, writing, thinking, and researching in print, electronic, observation and interview formats. Students also consider economic, social and political perspectives as applied to workplace communication and their professions. Formal aesthetic concerns are also addressed. Students produce individual and group projects, including oral and visual presentations, as they focus both on the process as well as the final products of their work.

Prerequisites: WRTG-101, HIST-1XX. May not be taken CR/NC.

WRTG-217 (Formerly L613) 3-0-3**Writing Seminar II: Science, Engineering, Technology and Health Professions**

This course has been designed primarily for students of science, engineering, technology, and the health professions. Students focus on critical reading, writing, thinking and researching in print, electronic, observation and interview formats. Students also consider economic, social and political perspectives as applied to workplace communication and their professions. Students produce individual and group projects, including oral and visual presentations, as they focus both on the process as well as the final products of their work.

Prerequisite: WRTG-101, HIST-1XX. May not be taken CR/NC.

Continuing and Professional Studies

All Continuing and Professional Studies courses are available only in an accelerated format

BEHLT-290 **3-0-3**

Clinical Interactions in Behavioral Health

This course builds on communication and clinical skills learned throughout other coursework and provides the student with a framework for the development of critical thinking skills and patient centered care perspectives within a variety of healthcare settings. Clinical reasoning skills such as patient triage, hierarchy of needs, short-term and long-term goal setting, and advanced assessment will be covered.

Prerequisites: COMM 310 and PSYCH 233

BEHLT-341 (Formerly J605) **3-0-3**

Behavioral Health and Neurorehabilitation

Focusing on the needs of clients and patients in specific environments, this course integrates behavioral and health sciences in the description of a range of interventions. Students will study specialized services used in the delivery of neuropsychology, rehabilitation nursing, occupational therapy and a variety of other fields.

BEHLT-499 (Formerly J610) **3-0-3**

Applied Project in Behavioral Health and Neurorehabilitation

Using the principles learned in CPS Core coursework, and/or applied psychology, neurorehabilitation, or behavioral health, this course requires students to design and develop a program directed toward addressing the health needs of an individual client/patient or group of individuals. Students are encouraged to apply their project to the future work environment where they plan to apply their expertise. Portfolio-based assessment allows students to demonstrate proficiency through display of artifacts related to their plan along with the presentation of documents that either assess the design of the project or describe project implementation.

Prerequisite: CPS Core coursework

BUS-499 (Formerly J525) **3-0-3**

Business Capstone Seminar

The process and techniques of strategy formulation, implementation and evaluation are studied and applied. Case studies of domestic and international companies and not-for-profit organizations will be used to integrate strategic management concepts with knowledge acquired in other classes. This course will include extensive written individual and team assignments and oral presentations.

Prerequisites: MGMT-401, MKTG-102, ACCT-101 and ACCT-102

COMM-310 (Formerly J204) **3-0-3**

Communication Theory and Practice

This course is designed to provide viable frameworks in communication and organizational theories and dynamics. Diagnostic criteria and delivery techniques will also be

explored, within both theoretical and pragmatic realms. The class will be conducted in an interactive seminar format.

COMM-320 (Formerly J204) **3-0-3**

Professional Communication Skills

This General Education Core course requires students to analyze, produce, and revise professional communication in a variety of written, oral, and multi-modal formats. Students produce individual and group projects in print and multimedia settings as they explore how economic, social and political perspectives apply to workplace communications, the professions and the professionals themselves.

CSSEM-300 (Formerly J100) **3-0-3**

Professional Practice Seminar

The introductory core course in Continuing and Professional Studies Bachelor of Science Accelerated Degree Completion Program. Course draws on a variety of sources to provide students the opportunity to create their own conceptual framework regarding their professional and personal experiences and understand how to integrate those frameworks into a personal plan for learning. Students are introduced to the requirements of the Continuing and Professional Studies Portfolio and create the first draft of their personalized portfolio. Required of all CPS majors.

Prerequisite: Admission to CPS Accelerated Baccalaureate Degree Completion program

CSSEM-499 (Formerly J210) **3-0-3**

Professional Studies Capstone Seminar

This General Education Core course examines emerging global issues in the areas of politics, economics, technology and the environment; and explores intercultural communication and the cultural dimensions of international business. Students present their final Continuing and Professional Studies Portfolios and analyze a relevant global trend and its expected impact upon their professional field. Required of all CPS Accelerated Bachelor of Science Degree Completion students.

Prerequisites: Completion of all General Education and Continuing and Professional Studies Core courses, completion of at least 3 electives and completion of at least 3 courses in the major area of study

ECON-331 (Formerly J111) **3-0-3**

Economic Decision Making

This Continuing and Professional Studies Core course introduces principles underlying the behavior of business firms, resource owners, and consumers within a system of markets. The theory of value and distribution and the implications of international trade on both value and distribution are addressed. Overall purpose of the course is to introduce many of the factors underlying sound economic decision making in the rapidly emerging global economy. There is a strong course focus on critical analysis of cases.

EMS-310 **3-0-3**

Emergency Services Law

This course explores the essential framework of federal, state and local laws that impact on emergency and public

safety services. It will provide an overview of the most important federal and state legislation that impact emergency services management and disasters.

EMS-320 3-0-3

Emergency Management Planning

Topics covered in this course include: program planning and management, financial planning, managing information, leadership and followership styles, decision making skills, community building skills, intergovernmental relationships, negotiating and communication skills and professionalism.

EMS-330 3-0-3

Public Health Issues Impacting Emergency Services

This course explores the relationship of public health and emergency and disaster prevention, response and recovery environments. Discussions examine the changing and unique role of public health in emergency management paying special attention to epidemiology, integration with traditional emergency services, medical and first responders, public safety, bioterrorism preparedness, and the need for comprehensive pre-education of professional and public communities. The class will cultivate insight into the necessary integration of public health in the development of effective emergency response contingencies specific to natural, accidental and international disaster events.

EMS-410 3-0-3

Disaster Response and Recovery Planning

A pro-active rather than re-active approach to disaster preparedness is the best means of mitigating damage from natural disasters or other forms of destruction. This course covers systematic planning efforts for when disaster emergencies occur. Whether small scale or catastrophic, they can be overwhelming. Information in this course provides guidance on business continuity planning and recovery.

EMS-499 3-0-3

Theoretical Applications and Applied Project in Emergency Services Leadership

Students will explore the relevant scholarly literature and then conduct an in-depth analysis of the emergency services industry and design an innovative project. Knowledge of statistical analysis, process planning, and data gathering will be used to complete their analysis and report on a contemporary topic or aspect of the business. Students will demonstrate their ability to assess the efficacy of program design as well as describe the project planning and implementation processes. Student projects are evaluated based on the capacity to incorporate familiarity with systems and planning in a comprehensive project in the context of their subject.

Prerequisites: STAT-311, EMS-310, EMS-320, EMS-330, EMS-410

FINC-323 (Formerly J121) 3-0-3

Financial Decision-Making

A Continuing and Professional Studies Core course that examines financial decision making both from the corporate and individual points of view. While the emphasis is primarily

on the corporation, discussions and analysis will be extended, where appropriate, to the individual.

Prerequisite: STAT-311

HIST-232 3-0-3

History and Philosophy of OTA Practice

The history of the OT profession will be described, including founding principles, key figures in the development of the profession, including the founders of OT in the United States and the history of the practice of OT throughout the United States beginning with the Reconstruction Aides. Key dates, events and philosophical underpinnings will be outlined, particularly the move from holism through the rehabilitation movement following World War II and the effect of technology on practice in the US. The OT Practice Framework will be introduced.

Prerequisite: WRTG-105

HIST-321 (Formerly J201) 3-0-3

Business, Industry and Work in American History

This General Education Core course surveys major themes in the history of work in America, focusing on how economic, technological and political changes have transformed the nature of work in America. Course readings explore industrialization, the emergence of mass production and modern management, the history of worker organizations, the decline of manufacturing and rise of a service economy, and the impact of globalization on work in America. Throughout the course, students consider connections between changes in the workplace and broader social and political developments, including changing gender roles and the civil rights movement.

HLTSV-210 (Formerly J125) 3-0-3

Ethical Issues for Health and Human Services Providers

This seminar style course is intended to provide tools necessary for considering and discussing ethical dilemmas in today's multicultural society. Meaningful dialogue requires an understanding of the evolution and development of ethics from the beginning of civilization. Sources used for this course include films and directed readings (text, newspaper articles, and internet resources). The goal of this course is to enhance the understanding and language skills of the provided so that he/she can engage in meaningful discussions of potentially highly charged emotional issues.

Prerequisite: WRTG-101

HLTSV-310 (Formerly J301) 3-0-3

Survey of Health Services Delivery Systems

This course provides an overview of the history, evolution and major components of U.S. health care systems. Topics covered include the organization of health care services, the hospital, the roles of health care providers, supply and demand in health care, third-party payers, the role of government and managed care and comparisons of health care systems in other countries.

HLTSV-315 (Formerly J302) 3-0-3**Public Policy and Planning in Healthcare**

An analysis of the processes related to the planning, organizing, staffing, directing and controlling of health care services. Specific emphasis is given to the key indicators and organizations that drive policy and planning in health care systems. The course also considers the impact of policy on practitioners in health care. The techniques of effective decision making and problem solving are also addressed.

HLTSV-325 (Formerly J303) 3-0-3**Emerging Issues in Healthcare**

This course explores the current trends in health care and issues affecting the organizational changes in the industry with regard to delivery of health care services in a wide variety of settings. Topics include history of U.S. health care services, current reform proposals, universal health care insurance, ethical issues, gerontological issues, labor relations, the changing workforce in healthcare and comparative perspectives of health care in other countries.

HLTSV-499 (Formerly J310) 3-0-3**Capstone Seminar in Health Services Management**

Students use knowledge of statistical analysis, process planning, and data gathering to complete an in-depth analysis and report on a sector or organization in the health care industry. Students' projects are evaluated based on demonstration of an understanding of systems, planning and dynamics of delivery in the context of their project.

Prerequisites: HRM-350, HLTSV-310, HLTSV-315 and HLTSV-325

HRM-321 (Formerly J401) 3-0-3**Staffing and Resource Development**

This course focuses on the recruitment and retention functions of human resource management, including EEO/Affirmative Action and career planning. In addition, the course focuses on the training and development functions inherent in retaining and enhancing a skilled work force. Training development includes needs analysis, programming and evaluation.

Prerequisite: MGMT-320

HRM-336 (Formerly J402) 3-0-3**Compensation, Benefits, and Health and Safety**

Focusing on the complex structure of employee benefits programs, this course also introduces students to compensation structures. In addition to the focus on compensation and benefits, the course also develops students' understanding of the legal and organizational aspects of health, safety and security.

Prerequisite: MGMT-320

HRM-350 (Formerly J132) 3-0-3**Cross-Cultural Communication and Diversity Management**

This course will examine how to manage the growing multi-cultural workforce in the United States. Topics include issues of intercultural communication and cross-cultural relations, ethnocentrism, racism and ageism. Students will develop an understanding and appreciation for cultures other than

one's own and will be able to discuss current techniques used in cultural analysis.

HRM-421 (Formerly J403) 3-0-3**Organizational and Employee Relations**

This course focuses in part on the function of union representation and collective bargaining in managing a large organization. In addition, it focuses on the role of planning, control, and information resources in the practice of human resource professionals.

Prerequisite: MGMT-320

HRM-499 (Formerly J410) 3-0-3**Applied Research and Practice in Human Resource Management**

This project-centered course requires students to develop a comprehensive human resource plan for an organization. Plans must include considerations of planning, staff development, compensation and benefit structures, and organizational health and safety requirements. Students will write and present a comprehensive plan, including materials targeted for employee development and relations.

Prerequisites: HRM-321, HRM-336 and HRM-421

HUMN-301 3-0-3**Art and Context**

An in-depth examination of images and objects from throughout history and world cultures. Emphasis will be on the materials and techniques of painting, sculpture, architecture and landscape architecture, and on what these objects and images say about the cultures that made and make them. Class format will be lecture, class discussions and student group presentations. Two self-guided Philadelphia-area field trips will be required.

HUMN-310 (Formerly J202) 3-0-3**Globalization and World Politics**

This course provides an overview of the forces which are shaping global economics and politics. Students will develop an understanding of the roles of international institutions such as the World Trade Organization, the International Monetary Fund and the United Nations, as well as non-governmental groups like Amnesty International and al Qaeda. Students will also examine the process of economic globalization in order to understand its varying impacts on different world regions.

IT-101 (Formerly J114) 3-0-3**Introduction to Information Systems**

This is an introductory course in Continuing and Professional Studies for students with no prior computer experience. The course is designed to teach students to use informatics that combine computer science, information processing, data-base management, word processing, spreadsheets and information presentation skills to facilitate management and processing of industry-related data.

IT-201 3-0-3**Learning with Technology**

This course will utilize students' previously acquired abilities to use Microsoft Word, Excel and PowerPoint in conjunction

with information retrieval, management and communication tools. Research methods are combined with resource use, leading to careful evaluation and ethical use of information. This course will be taught in a computer lab, combining lecture with hands-on activities and group work. Can complement courses in which the student is concurrently enrolled and that require research beyond the course's texts.

IT-315 (Formerly J501) 3-0-3
Information Technology I

This course prepares future managers to be effective organizers and users of modern information technologies. Emphasizing a global perspective of information technology and related business issues, students learn to view IT in broad terms and function as "internal consultants" to functional areas in an organization. The course covers office and manufacturing automation, telecommunications, decision-support systems and executive information systems. Students learn to integrate the informational needs of the organization with suppliers, customers and other decision-making entities. Course introduces management techniques to support effective employees whose actions are guided by the power of modern information technologies.

IT-317 (J502) 3-0-3
Information Technology II

This course introduces the fundamentals of computer-application development. Students will develop basic facility in digital media, electronic publishing, and decision support systems. The course also includes the use of information technologies for the automation of both office and factory environments.

Prerequisite: IT-315

IT-320 (Formerly J503) 3-0-3
Database Management

This course will provide an introduction to the creation and management of electronic databases. Topics covered include database design, relationships, normal forms, structured query language, importing data and creating reports and forms. Data-modeling techniques will also be covered.

Prerequisite: IT-317

IT-410 (Formerly J505) 3-0-3
Needs Assessment

This course provides an introduction to assessing the informational needs of an organization. Topics covered include equipment requirements, information design and technology integration as they impact the needs of an organization. Special attention will be given to usability studies and design development.

Prerequisite: IT-320

IT-499 (Formerly J510) 3-0-3
Project Management

This course focuses on strategic management of technology projects. Acting as a project manager, students learn techniques to elicit the support and acceptance of new technologies within organizations. Through the creation of a project

plan, students learn how to integrate informational technologies into an organization's mission.

Prerequisite: IT-410

LAWEN-301 3-0-3
Planning for Law Enforcement Organizations

This course covers strategic and tactical planning broadly conceived. The focus is on law enforcement, however theories, examples and perspectives will be drawn from other fields in the nonprofit sector. Topics to be addressed include forecasting, personnel planning, GIS, and personnel and resource management issues including budgeting and program evaluation.

LAWEN-310 3-0-3
Contemporary Law Enforcement Strategies

Understanding that law enforcement professional must attain an in-depth understanding of contemporary policing strategies and critical issues face law enforcement today, students will examine crime analysis, patrol techniques, training, information systems/GIS as well as other issues such as government relations and criminology.

LAWEN-410 3-0-3
Advanced Law Enforcement Theory and Management

This course focuses on the underlying theories of expert practices in police management and administration. Students will examine ethical issues specific to the field of law enforcement. This course builds on knowledge obtained through LAWEN-310 and utilizes academic and professional literature to address critical issues in the field.

Prerequisite: LAWEN-310

LAWEN-499 3-0-3
Capstone Seminar and Applied Project in Law Enforcement Leadership

Using concepts learned in CPS Core Coursework and Law Enforcement Leadership courses, students conduct an in-depth analysis of the law enforcement industry and design an innovative law enforcement initiative. Students will use knowledge of statistical analysis, process planning and data gathering to complete their analysis and report on a sector or organization in the industry. Students will demonstrate their ability to assess the efficacy of a program design as well as describe the project planning and implementation processes. Students' projects will be evaluated based on the capacity to incorporate familiarity with systems and planning in a comprehensive project analyzing the dynamics of the law enforcement industry in the context of their project.

Prerequisites: LAWEN-301, LAWEN-310, LAWEN-410, MGMT-320

MATH-215 3-0-3
College Algebra

This course is designed for undergraduate students enrolled in Continuing and Professional Studies programs. Heavy emphasis will be placed on applications and mathematical modeling. Topics covered include those in a traditional College Algebra course. Students will gain knowledge and

skills in problem solving and modeling using graphing calculators and computer software.

MGMT-330 (Formerly J123) 3-0-3
Organizational Ethics

This Continuing and Professional Studies Core course deals with current controversial issues in organizational ethics. The course will be conducted as a seminar. Students will research specific topics and present this information to other seminar members.

MGMT-351 (Formerly J101) 3-0-3
Leadership Theory

This Continuing and Professional Studies Core course is designed to increase awareness and broaden both knowledge base and application of leadership theory, trends, and applications. Individual leadership styles will be assessed with a focus on viably integrating a full range of leadership skills within the rapidly changing workplace. Designed to provide students with knowledge regarding the managerial process, planning, organization, strategic leadership and change-oriented leadership. Theories related to organizational structure, competition, leadership, management strategy, communication and social responsibility will be examined.

MKTG-320 (Formerly J122) 3-0-3
Visual Literacy

A survey course in which students will examine, appreciate and communicate with visual media. Students will enhance their capacity to look at a design and evaluate what is effective, with an understanding of design language and the process by which good communication is created.

OTA-300 4-4-6
Anatomy, Physiology and Biomechanics

This course will examine the anatomical and physiological aspects of the various systems of humans, including integumentary, neurologic, sensory, musculoskeletal, reproductive, circulation, respiration, nutrition-digestion, excretion and endocrine. Biomechanics of muscles, bones, and ligaments of the human body and the interactions between these structures to illustrate how movements are performed will be addressed. Students will be introduced to strategies for adaptation that can lead to improved function in relevant contexts. The OT Practice Framework 2 terminology will be used to describe daily life problem solutions. A close correlation between lecture and laboratory topics will be maintained.
Prerequisite: BIOL-101

OTA-302 3-2-3
Occupations Across the Lifespan: Infancy Through Adolescence

The course will focus on the observations, analysis, and performance of human occupations in work, self-care and play/leisure from infancy through adolescence. The teaching-learning process will be incorporated, with an emphasis on self-directed learning by doing. The OT Practice Framework 2 terminology will be used to describe observations and findings.
Prerequisite: HIST-232

OTA-304 3-2-3
Occupations Across the Lifespan: Adulthood

The course will focus on the observations, analysis, and performance of human occupations in work, self-care and play/leisure from late adolescence through the elder years. The teaching-learning process will be incorporated, with an emphasis on self-directed learning by doing. The OT Practice Framework 2 terminology will be used to describe observations and findings.
Prerequisite: OTA-302

OTA-306 3-2-3
Conditions I: Infancy through Adolescence

The etiology and symptoms of clinical conditions that are commonly referred for occupational therapy services are examined. The effects of trauma and disease on the biological, psychological, and social domains of occupational behavior are introduced, with particular emphasis on conditions usually experienced from infancy through adolescence. Procedures and precautions ensuring safety for patients and caregivers will be reviewed. This course includes a graded offsite fieldwork component to complement academic teaching content.
Prerequisites: PSYCH-101 Introduction to Psychology
OTA-300 Anatomy, Physiology and Biomechanics

OTA-308 3-1-3
Conditions II: Adulthood

The etiology and symptoms of clinical conditions that are commonly referred for occupational therapy services are examined. The effects of trauma and disease on the biological, psychological, and social domains of occupational behavior are introduced, with particular emphasis on conditions usually experienced from early adulthood through aging. Procedures and precautions ensuring safety for patients and caregivers will be reviewed. Students will be introduced to the resources available for keeping current as new protocols and best practices develop.
Prerequisites: OTA-306 Conditions I: Infancy through Adolescence

OTA-310 3-0-3
Environments and Contexts of Occupation

Environments and contexts can have an enormous effect on occupational therapy intervention. Across all practice areas, occupational therapy intervention uses environments and contexts to support the client's/patient's health and participation in meaningful occupations. This course focuses on understanding the complex nature of contexts and the environments and their impact on engagement in occupations across the life span.
Prerequisites: OTA 304: Occupations Across the Lifespan-Adulthood

OTA-400 3-0-3
Leadership and Human Service Systems

Basic management skills and abilities required as a COTA in occupational therapy and other programs will be defined and analyzed. The student will explore topics associated with health care delivery systems, including contextual factors,

federal and state regulations, reimbursement systems, and credentialing laws. Skills in management will be reviewed, including organizing and maintaining workload, marketing services, documentation in its various forms, and supervision of aides and developing skills as a fieldwork educator. Ethical and professional principles will be defined in the context of a variety of employment and intervention settings, with an emphasis on applying AOTA's Code of Ethics to different situations.

Prerequisite: HIST 232 History and Philosophy of OTA Practice

OTA-402 **Ethics and Critical Thinking I** **2-0-2**

Students will examine the AOTA Code of Ethics in-depth and then use it and the AOTA Occupational Therapy Practice Framework to analyze case studies and examples from fieldwork to further their understanding of liability issues, ethical dilemmas, and decision-making in professional interactions, client interventions, and employment settings.

Prerequisite: Ethics and Critical Thinking I

Co-Prerequisite: Fieldwork II A

OTA-404 **Ethics and Critical Thinking II** **1-0-1**

Clinical reasoning, ethical principles, and understanding the values of the profession are defined. The student will discuss and describe the value of local, state, and national professional OT organizations, the importance of promoting the profession and developing a personal professional development plan, and recognizing personal strengths and areas for improvement. Students will demonstrate their critical thinking and overall knowledge acquisition by presenting their summative OTA Program Portfolio in conjunction with this course.

Prerequisite: Ethics and Critical Thinking I

Co-Prerequisite: Fieldwork II B

OTA-406 **Fieldwork Level II A** **2-6-6**

Minimum eight weeks and 300 hours supervised experience. Students apply and integrate didactic knowledge and skills with clients in a variety of settings under the supervision of a registered and licensed occupational therapist. Students are assigned to facility and community settings and receive practical experience applying knowledge and skills with individuals of varying ages and conditions. Prior to enrolling, students must successfully complete all required OTA courses, demonstrate current CPR certification, and receive departmental approval.

Pre-requisites: IT 201, OTA 310, MATH 215, OTA 400, OTA 414 – Interventions III: Late Adulthood.

Co-Prerequisite: OTA 402 Ethics and Critical Thinking I

OTA-408 **Fieldwork Level II B** **2-6-6**

Minimum eight weeks and 300 hours supervised experience. Students apply and integrate didactic knowledge and skills with clients in a variety of settings under the supervision of a registered and licensed occupational therapist.

Students are assigned to facility and community settings and receive practical experience applying knowledge and skills with individuals of varying ages and conditions. Prior to enrolling, students must successfully complete all required OTA courses, demonstrate current CPR certification, and receive departmental approval.

Pre-requisite: OTA-406 Fieldwork II A

Co-Prerequisite: OTA 404 Ethics and Critical Thinking II

OTA-410 **Interventions I: Infancy through Adolescence** **3-3-4**

Through analysis and simulation of occupations, OTA students gain insight and skill in observation, assessment, documentation, and teaching of adapted self-care, work and play/leisure activities for the person with life challenges from infancy through adolescence. Conditions commonly occurring in this age group will be reviewed. The dynamics of group and individual participation in occupations are explored as they relate to assessment and therapeutic intervention.

Pre-requisite: OTA-302 Occupations across the Lifespan I: Infancy through Adolescence and OTA-306 Conditions I: Infancy through Adolescence.

Pre-requisite: OTA-302 Occupations across the Lifespan I: Infancy through Adolescence and OTA-306 Conditions I: Infancy through Adolescence.

OTA-412 **Interventions II: Young through Middle Adulthood** **3-3-4**

Through analysis and simulation of occupations, students gain insight and skill in observation, assessment, documentation, and teaching of adapted self-care, work and play/leisure activities for the person with life challenges from young through middle adulthood. Conditions commonly occurring in this age group are reviewed. The course includes laboratory and directed offsite fieldwork components to complement lecture content.

Pre-requisite: OTA 410 Interventions I: Infancy through Adolescence; OTA 304 Occupations Across the Lifespan II: Adulthood; OTA 308 Conditions II: Adulthood

OTA-414 **Interventions III: Late Adulthood** **3-3-4**

Through analysis and simulation of occupations, the students gain insight and skills in observation, assessment, documentation, and teaching of adaptive self care, work, and play/leisure activities for the person with life challenges in late adulthood. Conditions commonly occurring in this age group will be reviewed. This course includes laboratory and directed offsite fieldwork components to complement lecture content.

Pre-requisite: OTA-412 Interventions II: Young through Middle Adulthood

SOC-310 (Formerly J203) **The Social Science of the Workplace** **3-0-3**

This General Education Core course examines the contemporary world of work using analytic tools from a variety of disciplines, including sociology, psychology, and anthropology. Key themes include: the social organization of work, contemporary changes in occupations and professions, technology and the information age, the impact of globalization on work, the role of class, gender, race and ethnicity in shaping

work experiences and worker identities, and the relationship between work and family. Students learn about basic social science research techniques, practice interpreting data and thinking critically about contemporary work issues, and develop their own arguments about the world of work.

STAT-311 (Formerly J112) 3-0-3

Finding and Evaluating Statistical Data

A Continuing and Professional Studies Core course in data gathering and analysis, focusing on the use of demographic and economic data that inform organizational decision making. Students will learn basic descriptive statistical measures and probability theory and develop an understanding of the basis for statistical decision-making techniques. A variety of resources for gathering data related to demographics, socio-economic and socio-geographic trends, economics data, and trends in business and industry will be presented. Students will also review and apply a variety of descriptive and/or inferential statistics to make meaning of these data. Students will learn to manipulate data using statistical software.

WRTG-105 3-0-3

Writing About Workplace Culture

Students in this thematic writing-specific course draw evidence from multiple sources while developing thesis-driven essays and other types of personal, academic and professional writing. To examine the purposely broad theme of workplace culture, students will research, write, and present on topics such as professional ethics, the multicultural workplace, technology on the job, workplace politics, and corporate citizenship. Students will also develop targeted information literacy skills and enhance their abilities to think independently and on teams.