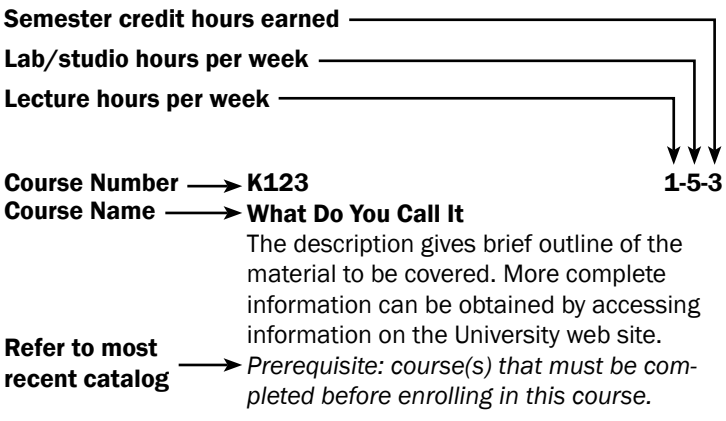
Course Descriptions

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

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

CMW	Midwifery
DMM	Disaster Medicine and Management
FAS	Fashion Apparel Studies
FASF	Fashion Apparel Studies Foundation
IARCP	Interior Architecture
IDD	Interactive Design and Media
IDT	Instructional Design and Technology
MBA	Master of Business Administration
MBF	Master of Business Foundation
MCM	Master of Construction Management
MMW	Midwifery
MSID	M.S. in Industrial Design
OCC	Occupational Therapy
PAS	Physician Assistant Studies
PASF	Physician Assistant Studies Foundation
SDN	Sustainable Design
TAX	Tax
TES	Textile Engineering, PhD
TXD	Textile Design
TXE	Textile Engineering, MS
TXF	Textile Design Foundation

Course Descriptions

CADF-500 **3 credits**
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.

CADF-501 **3 credits**
CAD II: Interactive Design and Media 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 CAID 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

CMW602 **0.5 credits**
Interviewing and Counseling
This is an on-campus intensive course focusing on the skills a midwife requires to successfully communicate with clients. This course will develop basic interviewing and counseling skills that build trust and demonstrate respect for women. Theory and practice of skills for interviewing and counseling women in all aspects of women's health care are offered.

CMW604 (formerly CMW603) **3 credits**
Advanced Anatomy and Physiology
This course focuses on the structure of the human body and its mechanical, physical, and biochemical processes. Anatomical and physiological principles necessary for health care professionals are presented. Normal and abnormal structures and processes underlying health and disease are presented with connections made to assessment and diagnosis in the clinical setting.

CMW605 **2 credits**
Professional Issues
This course is designed to provide an appreciation of the history and critical issues in midwifery, as well as the health care field in general. This course will also increase appreciation of the variety of roles that a midwife can play and aid

in understanding rights and responsibilities as a midwifery health care provider.

CMW606 **2 credits**
Health and Lifestyles
This course provides an overview of health promotion and public health concepts. The construct of wellness is explored. Lifestyle, relationships, and cultural competence are examined within the context of our own lives and midwifery practice.

CMW607 **4 credits**
Healthcare of Women I
This course presents basic principles and application of well-woman care across the life span. Sexuality, menstrual cycle function/dysfunction, common gynecological conditions, family planning and health care promotion are common threads in this course. Students receive information on physiology, health screening and midwifery management of common primary care conditions.

CMW610 **4 credits**
Antepartum Care
This course examines the fundamentals of prenatal care, including the components of prenatal care, criteria for assessing perinatal outcomes and the application of the midwifery management process in the antepartum period. Theoretical foundations for diagnosis and dating of pregnancy, common discomforts of pregnancy, assessment of pelvic adequacy and assessment of fetal well-being and nutrition in pregnancy are covered in depth.

CMW611 **4 credits**
Intrapartum Care

CMW613 **1 credit**
This course teaches the principles of midwifery for the laboring woman and her family, correlating physiologic processes to the maternal and fetal experiences of labor and birth. Concepts of normal birth and its variations lead to thoughtful analysis of management options.

CMW612 **2.5 credits**
Postpartum/Newborn Care
This course develops the knowledge base for assessing the physical and emotional changes of the postpartum period, breastfeeding, early attachment and parenting behaviors. It provides the knowledge base for understanding the physiology of transition to extrauterine life and early newborn adaptations. Assessments for newborn health, gestational age and attachment behaviors are included.

CMW613 **1 credit**
Embryology and Genetics
This hybrid distance and on-campus course will cover basic concepts of genetics, including inheritance and genetic disorders. Concepts of embryology will include fertilization, implantation and the embryonic period.

CMW617 **0.5 credits**
Postpartum Newborn Workshop
This on-campus course is composed of case studies allowing students to evaluate assessment data and apply the midwifery management process to typical postpartum clients at various stages of the puerperium. Performing physical/neurological examination and gestational age assessments of the newborn will be reviewed. Case studies will emphasize midwifery management of common newborn variations and problems.

CMW619 **4 credits**
Perinatal Complications
This course examines the fundamentals of perinatal care of complex client(s) in the antepartum, intrapartum, postpartum and newborn periods. Students will utilize course materials to simulate and problem-solve written cases in a virtual midwifery practice. Midwifery management discussions and peer review will include a variety of topics of frequently seen complications in the perinatal period.

CMW620 **2 credits**
Healthcare of Women II
This course examines the fundamentals of advanced gynecological care. Theoretical foundations for assessment and diagnosis will include: anomalies, alterations and tumors of the reproductive tract; intimate partner violence and addictive disorders; sexual dysfunction and infertility; menstrual cycle disturbances and ectopic pregnancy; infections of the reproductive tract; and multiple systems medical problems.

CMW 631 **2 credits**
Clinical I Maternity and Well Woman Care 1
The course consists of supervised clinical practice in the midwifery management of uncomplicated antepartum and well-woman clients needing routine primary care, care for common gynecologic problems and contraception. Students learn consistent and accurate use of the midwifery management process with emphasis on subjective and objective data collection and beginning assessment and plan development. An on-campus skills workshop prepares students for this clinical course and includes risk assessment, development of a needs assessment and problem list, and pertinent hand skills. Additionally, history taking and physical assessment will be reviewed and demonstrated. Microscopy skills will be introduced. Contraceptive techniques will be reviewed.

CMW632 **3 credits**
Clinical II Maternity and Well Woman Care 2
The course consists of supervised clinical practice in the midwifery management of uncomplicated antepartum and well-woman clients needing routine primary care, care for common gynecologic problems and contraception. Students are expected to continue to demonstrate consistent and accurate use of the midwifery management process with emphasis on independent development of an assessment, plan for, and evaluation of, care. This course is three credits and consists completely of continued clinical practice in the midwifery management of uncomplicated antepartum and

well woman clients needing routine primary care, care for common gynecologic problems and contraception. The prerequisite is successful completion of CMW631, Clinical I.

CMW633 **4 credits**
Clinical III Full Scope Midwifery Care 1
Clinical III adds supervised clinical practice in the care of uncomplicated intrapartum, postpartum and newborn clients. Students learn consistent and accurate use of the midwifery management process with emphasis on subjective and objective data collection and beginning assessment and plan development in the care of intrapartum clients. Management of patients experiencing complications/emergencies requiring consultation/ referral will be included. Emphasis is also placed on facilitating breast-feeding, positive family bonding, and management of newborns within their families. The prerequisite is successful completion of CMW632, Clinical 2.

CMW634 **5 credits**
Clinical IV Full Scope Midwifery Care 2
Clinical IV consists of supervised clinical practice in full-scope midwifery care in a student role. Students manage uncomplicated and complicated clients needing primary care, gynecologic, intrapartum and perinatal care. Students continue to demonstrate consistent and accurate use of the midwifery management process with emphasis on independent assessments, planning, implementation and evaluation of care, consultation and referral. Pre-requisite is successful completion of CMW633, Clinical III.

CMW 635 **3 credits**
Basic Skills in Health Care
This course is an introduction to common health care skills and knowledge used in clinical practice. Presentation of self as care provider to diverse clientele with respect for human rights is emphasized. Contents include but are not limited to vital sign measurement and interpretation, infection control, sterile technique, wound care, urinary catheterization, venipuncture, fetal and uterine external monitoring application, emergency response procedures, therapeutic presence and communication, and skills in team building and patient advocacy. Medical terminology, written and electronic medical records and basic laboratory assessments will be reviewed. Practice and successful return demonstration of selected skills will be done at the student's first on campus experience after completion of this course.

CMW 636 **3 credits**
Environments of Health Care
The effects of various environments of care on social dynamics between health care providers and patients will be explored. Theories of stress and coping and shared leadership will be addressed. Environments examined will include: home, office/clinic, hospital/health care institution, and care in place – disaster/emergency care. Available resources in each environment and the evidence supporting their use or misuse will be discussed. Observational clinical experiences in a variety of environments will be described and analyzed via reflective journals and asynchronous seminar discussion. Midwifery role and scope of practice in the various environments will be highlighted. Identifying local health care providers and resources for future practice referrals situates midwifery care in a system which provides for needs of women and their families ranging from simple to complex.

CMW 637 **3 credits**
Health and Illness in Clinical Practice
This course will examine concepts of health and illness at various stages of human development. The midwifery model of care and the midwifery management process will be introduced as frameworks guiding care practices. Wellness care and complementary integrated approaches will be discussed. Selected common health alterations at every life phase will be explored, with emphasis on the midwife's role for independent or collaborative management or referral. The plan of care for these clients – including further testing or assessment, therapeutics and educational needs - will be examined. Problem based learning scenarios will serve as the stimulus for identifying learning needs and developing midwifery care strategies.

CMW638 **2.5 credits**
Advanced Pharmacology I
This course is a comprehensive course in pharmacology for women's health care. The language of pharmacology and the principles of pharmacodynamics and pharmacokinetics serve as the foundation for the course. Major classifications of agents that are covered in the course include: hormones, antimicrobials, analgesia and anesthesia, over-the-counter drugs. Prescriptive writing, including legal and ethical aspects, is also covered as well.

CMW639 **0.5 credit**
Advanced Pharmacology II
This course is second in a two-part series in pharmacology for women's health care. Concepts and issues in drug prescription for pregnant women and their newborns are presented. Changes in pharmacodynamics and pharmcokinetics during pregnancy are reviewed. Major classifications of agents covered in the course include: vitamins and minerals; uterotonins/uterotropins; and drugs administered to newborns.

CMW640 (formerly CMW630) **2 credits**
Preparation for Full Scope Midwifery Practice I
This on-campus course explores issues in midwifery practice including: the role, rights and responsibilities of the midwife in the clinical practice setting; the legal, ethical and financial realities of professional midwifery practice; alternatives in full scope midwifery care with examples from experts; and environments of midwifery care including home, hospital and birth center settings. Students take a closer look at one birth center model of childbearing care by spending time on site. Content covered in this visit includes: 1) the history, philosophy and development of the birth center movement in the United States and 2) the accreditation and needs assessment process.

CMW699 **3 credits**
Advanced Physical Assessment
This course is designed for the individual preparing to begin a nurse-midwifery program of study. Midwives are often a woman's first contact with the health care system. Women seek care from midwives not only during the childbearing cycle, but for family planning and well woman health care throughout the adult life cycle. As primary care providers for women, nurse-midwives will use these skills of clinical assessment daily. At the completion of this course the student will have the knowledge and skills in physical assessment of the adult female to provide clinical services at a beginning level.

DMM611 **3 credits**
Principles of Disaster Medicine and Management
This course provides students with a general overview of disaster events and covers the key components of disaster prevention, risk assessment and disaster management including: types of disasters, phases of disasters (preparedness, mitigation, response, and recovery), agencies involved in disaster situations, public service disruptions, mass casualty triage, human resource issues, media relations, ethical considerations, communications and incident command systems.

DMM612 **3 credits**
Foundations of Homeland Security and Defense
The US has embraced the homeland security monolith having neither fully understood nor tamed all that it encompasses. This challenging course provides a broad overview of homeland security and homeland defense as undertaken in the United States since 9/11. The goal is to provide the generally accepted body of knowledge required of the homeland security professional. The course focuses on four areas: the enemy, animosity and potential outcomes of threats posed; the policies and procedures enacted since 9/11; federal, state and local governmental roles; and legal issues critical to the conduct of homeland security and defense activities by the military including the National Guard. The student will gain an understanding in asymmetric thinking, develop an appreciation for the growing body of literature in the discipline of homeland security, and have the opportunity to examine a key issue in depth through a term research paper.

DMM615 **3 credits**
Hazardous Materials & Industrial Safety
This course provides an overview of the major hazardous materials commonly encountered and their effects on humans and wildlife. Industrial waste, pollution, nuclear waste, hazardous waste transportation and the management of hazardous material accidents are all covered.

DMM617 **3 credits**
GIS in Emergency Management
This course will provide students with an introduction into geographic information systems by infusing it into emergency management. The class will focus on the 3 major elements: 1) Fundamentals of GIS, 2) Knowledge of GIS software, and the 3) Understanding of the spatiality in emergency management situations.

DMM619 **3 credits**
Natural Disasters
The purpose of this course is to develop an understanding of the various types of natural disasters which plague the world. The student will study the forces of nature which cause these events to occur, the population effects of the event itself and the dynamic nature by which the event spawns further cataclysmic change in our environment.

DMM623 **3 credits**
Weapons of Mass Destruction
This course introduces students to the various types of biologic, chemical and nuclear/radiologic weapons, along with the clinical manifestations and management of exposure to these. Decontamination and institutional procedures for weapons of mass destruction incident management are also covered.

DMM624 **3 credits**
Organizational Risk and Crisis Management
This course examines key concepts in the understanding and management of risk in an organizational environment. Aspects of risk evolution, tools and techniques, project vulnerabilities, uncertainty, modeling and risk software are included.

DMM 625 **3 credits**
Business Continuity – Planning for a Crisis
The course explores the issues in maintaining a business in the midst of crisis and the disruption of resources. It includes planning for, responding to, and recovering from an internal or external crisis in the organization.

DMM626 **3 credits**
Organizational Recovery and Planning
This course discusses business and organizational implications of the disaster recovery lessons taught by 9/11, the California energy crisis, the anthrax scare and other related disastrous events as they relate to emergency decision making and planning. Special emphasis is directed toward infrastructure and IT/IS implications of process continuation.

DMM627 **3 credits**
Principles of Terrorism
The types of terrorism, along with the social, political and psychological motivations and ramifications of terrorism are the focus of this course. Threat risk assessment and prevention strategies are also components.

DMM631 **3 credits**
Organizational Management and Communication in Disasters
This course introduces students to theories of organizational dynamics and management as it pertains to crisis and disaster situations. The course also explores communication within the organization, with external agencies, and with the public and media during and after disaster events.
Prerequisite: DMM611

DMM635 **3 credits**
Psychological Aspects of Disasters
This course explores the psychological sequelae of disasters and traumatic events including acute stress disorder and posttraumatic stress disorder. The clinical presentation, assessment and management of these disorders are discussed. Clinical interventions such as post-event debriefing, short-term counseling and mental health referral in disaster situations are also covered.
This course includes an intensive on-campus experience. Offered in Summer only.

DMM639 **3 credits**
Principles of Disaster Exercises & Drills
This course will prepare students to develop and implement effective emergency disaster drills and tabletop exercises. It will also encompass the principles of mass casualty triage. The principles of adult learning and educational assessment are also covered. This course includes an intensive on-campus experience. Offered in Summer only.
Prerequisite: DMM611

DMM643 **3 credits**
Public Health Implications of Disasters
The purpose of this course is to develop an understanding of the concepts of public health as they relate to disaster management. The student will apply Noji's five phases of a disaster to actual disaster events during the last 25 years and will focus especially on what preparedness actions are necessary to safeguard the health of citizens and emergency personnel during a disaster event. Public health issues in disaster management that are covered include water and food supply disruption and contamination, waste disposal, environmental pollution and infectious disease outbreaks. The basic principles of epidemiology and health surveillance are also reviewed.

DMM647 **3 credits**
Disaster Emergency Planning
This course encompasses the major aspects of a comprehensive disaster plan including: physical resources, human resource considerations, interagency interaction, communication, incident command systems, evacuation of injured, crowd control, traffic management, hospital capacity, decontamination, material management logistics, media relations, mortuary services, survivor and rescuer grief counseling, and exercises.
Prerequisite: DMM611

DMM648 **3 credits**
Emergency Preparedness for Special Needs Population
The term "special needs" is widely used within the disaster services and the emergency management world. It generally refers to an extremely broad group of people with physical disabilities, people with serious mental illness, pregnant women, children, and the elderly. These groups represent a large and complex variety of concerns and challenges. Many of these groups have little in common beyond the fact that they are often left out of programs, services, and emergency planning.

This course will introduce students to planning, responding, mitigating, and recovering from a disaster as it pertains to the special needs population. This will include specific functional roles, resource identification and response of personnel involved in disaster management. Students will be presented with problem based learning assignments and based on the assigned readings, research, and personal experiences, they will be able to analyze and apply the theories and principals pertaining to the response and recovery of an event to these special populations.

DMM649 **3 credits**
Healthcare Emergency Management
Healthcare emergency management has steadily evolved over decades but at an increased rate since September 11, 2001. The increased emphasis on disaster preparedness from both the public as well as regulatory agencies now requires a level of knowledge beyond the technical level. This course is designed to provide a foundation in hospital emergency preparedness.

DMM651 **3 credits**
Applied Research Methods & Statistics
Basic statistics and research methods used in the medical and social sciences are covered in this course. Students will have the opportunity to review current medical research and evaluate it with regard to its application to practice.

DMM653 **3 credits**
Clinical Disaster Medicine
This course is designed to expose the student to the clinical aspects of disaster medicine by encouraging exploration of the roles of healthcare providers in disasters, the study of clinical situations that occur during disasters, analysis of public, occupational, and environmental health issues, and applying clinical research and epidemiology concepts.
Prerequisites: DMM611

DMM755 **3 credits**
Capstone Experience in Disaster Medicine and Management
In this capstone experience students will complete either an: original research project; an original disaster plan; a systematic review paper on a disaster-related topic with thorough literature search, analysis and compilation; or an internship with disaster plan. All of these will involve a thorough literature search, an analysis of the current research, integration of multiple facets of disaster medicine and management and completion of a substantial written product.
Prerequisites: DMM611, DMM631, DMM647, DMM651

DMM791 **3 credits**
Internship in Disaster Medicine and Management
This experience is an optional internship in disaster medicine or management at an agency involved in disaster preparedness or response. This may include international experiences when available.
Prerequisites: DMM611, DMM631, DMM647 Requirements may apply, see program director or Office of Career Services for details.

DMM797 **1-3 credits**
Special Topics in Disaster Medicine and Management
This course provides an opportunity to explore topics in disaster medicine and management not developed in other courses. Examples include recent complex humanitarian emergencies, disasters, or catastrophes, new practice technology, essential health policy changes, new research findings, and other cutting edge materials. Students may take this course more than once as the topics differ each time it is offered.

FAS611 **3 credits**
Product Development
In the development of any apparel product, attention must be given to form, function, fit and appearance and to their interrelationship. Form involves the influence of preference and individual choices. Function includes such aspects as "fitness for use," taking into account levels of activity, gender and age. Account must also be taken of the influence of markets, as well as the opportunities and constraints presented by design, cost and manufacturing systems. At the managerial level, the individual is faced with constant change from original concept to the end product. Multiple adjustments to the product arise at every phase requiring tremendous ingenuity and problem-solving skills. Graduates will be faced with this kind of process in the apparel industry and need to manage and follow through with the development of a product.

FAS612 **3 credits**
Integrated Technology
This course aims at showing that state-of-the-art technology in a given field has become an essential component for strategic leadership, profitability and stable employment. The point is made by providing a broad perspective on the major technical advances experienced by the apparel industry from the 1980s and their positive impact on the national industries where they originated and/or were adopted. Analysis of the difficulties met by high wage countries failing to follow that course helps to reinforce the point. Review of the factors accounting for these advances brings out the critical importance of technology transfer and fusion in the formulation and development of basic concepts. Detailing both processes offers the opportunity to introduce the notion of systemic thinking and its growing influence on management style. It is intended that the student will gain a global perspective of the textile and apparel business and of the growing role played by advanced technology and its impact on finances and personnel.

FAS621 **3 credits**
Global Marketing and Sourcing Strategies (Marketing Option)
U.S. textile and apparel companies are under siege, facing competitive threats that have been continually mounting for years. What it takes to be successful in the future is explored. The concept of "business as usual" has long outlived its usefulness, and new and refreshing approaches are necessary. Students will be introduced to avant-garde management concepts often espoused, but seldom adopted, by most textile and apparel managements. The course is designed to introduce the student to the global perspective of today's apparel industry and to prepare the student to make critical international marketing and sourcing decisions within a complex economic environment. Students will explore the major variations which occur across international markets - economic, social, and cultural; examine the behavior of business within different marketing and manufacturing contexts; and consider the factors involved in making effective global marketing and sourcing decisions.

FAS622 **3 credits**
Distribution Management (Marketing Option)
Globalization of the textile and apparel business will require companies to change the way they operate in an attempt to keep one step ahead of the competition. This is particularly the case for multinational companies and those sourcing from overseas. They will have to significantly change their logistic strategy with regard to distribution management, taking into account new computer technology, systems management and product compatibility. The course will: (a) distinguish the role of physical distribution management (PDM) as a unique discipline, and identify the demand placed upon PDM from both U.S. and international operations; (b) assess and evaluate the PDM function comparing alternative technology-based strategies and/or commercially determined "trade-off" policies that prevail in this dynamic trading environment; and (c) identify key issues in the planning and implementation of a commercially sound distribution operation, with an emphasis on transport management, warehouse management and total distribution management.

FAS631 **3 credits**
Computer Integrated Management (Advanced Manufacturing Option)
The erosion of the textile and apparel production base in the western world is a serious challenge for the U.S. domestic industry. Progressive domestic companies are now placing greater emphasis on the introduction of computer-aided design and quick response technology. This computer-based technology includes: (a) the product development cycle using CAD/CAM techniques to reduce the time involved in designing and introducing new products to the marketplace; (b) increased process control and manufacturing efficiency; and (c) the potential for reducing the delivery response time between textile manufacturers, apparel manufacturers and the retailer. The course will evaluate the cost/benefits of CAD/CAM technology and through lecture, laboratory and experiential activities, will examine the role of CAD/CAM in risk reduction, creativity enhancement and improved customer service.

FAS632 **3 credits**
Systems Engineering (Advanced Manufacturing Option)
Various production systems in apparel manufacturing are under investigation and are being subjected to critical review in an attempt to improve responsiveness and flexibility to meet consumer needs and desires on a timely basis. This course will focus on hardware and software linkages within the

apparel industry; maintaining a global perspective of information flow between suppliers and consumers; developing criteria for examining, measuring and assessing the effects of changing environments on assembly operations; and productivity improvements and financial implications.

FAS731 **3 credits**
Textile Marketing
The course is designed to integrate students' previous exposure to general marketing principles with specific application to the textile, apparel and related industries. The marketing planning process will be integrated into studies of textile products, promotions, merchandising, distribution, competition and inventory. The course will identify and analyze worldwide textile marketing opportunities and introduce the concept of global strategy formation through development of a marketing plan for a textile/apparel/manufactured product in two distinct countries. The roles of key textile and apparel-producing countries and sourcing there from, trade agreements and treaties, and world trade blocs like NAFTA and the WTO will be examined through readings, presentations, class discussion, case analysis and visiting speakers.

FAS 732 **3 credits**
Global Textile & Apparel Industry Seminar
This course will expose students to a wide variety of topics and enable them to discuss broad issues that cut across several disciplines. This course will enable the student to evaluate the content and delivery of a series of presentations. It will also provide an opportunity to conduct research on a specific topic and then write a comprehensive report of their findings.

FAS 734 **3 credits**
Inventory & Logistics Mgmt
The course provides a broad introduction to many critical facets of supply chain. Students in this course will understand existing tools utilized in managing inventory and logistics in the global supply chain. The course covers topics in inventory logistics management, network design, value of information sharing, the international supply chain, supply chain contracts, and risk management.

FAS763 **3 credits**
Research Project
This course is a capstone course for Fashion Apparel Studies. The student, with the consent of the instructor, will perform self directed research in an appropriate area of interest within an apparel company. The student will investigate, document and then analyze how their research findings affect the operation of the individual company, its suppliers, and its customers. Finally, the student will recommend changes that will improve the performance of the company and the other members of the supply chain.
Prerequisite: MBA-762

FAS778 **3 credits**
Computer-Aided Design/Computer-Aided Manufacture
The continued erosion of the textile and apparel production base in the United States, caused by increased imports of textile and apparel products, is a serious challenge for the domestic industry. Progressive sectors of the textile and apparel industries are consequently now placing a greater focus on the introduction of "Quick Response Technology." This computer-based technology includes: (a) the product development cycle using CAD/CAM techniques to reduce the time involved in designing and introducing new products to the marketplace; (b) increased process control and manufacturing efficiency; (c) the potential for reducing the delivery response time between textile manufacturers, apparel manufacturers and the retailer. This course will evaluate the cost/benefit of CAD/CAM technology to textile and apparel companies. Through lecture, lab and experiential learning, it will examine the role of CAD/CAM in risk reduction, creativity experiments and improved customer service. The potential use of CAD/CAM as a marketing tool, and the potential for Electronic Graphics Communication among textile manufacturers, apparel manufacturers and retailers, will also be analyzed.

FAS790 **3 credits**
Textile and Apparel Business Policy and Strategic Planning in a Global Environment
This course will study the textile and apparel business in a highly competitive and complex environment. Consideration will be given to the changing demands of the marketplace and consumers, and the external forces that can impact a company's performance, many of which are beyond management's control. The process and techniques of strategy formulation, implementation and evaluation are studied. The course will include lectures, workshops, case studies and assignments.

FAS791 **3 credits**
Internship
Internships provide students with an opportunity to apply and further develop the knowledge they have gained in the classroom. Under faculty supervision, students work in salaried positions related to their career goals. While on their assignments, students develop meaningful learning objectives, attend an internship seminar, complete challenging assignments and write bi-weekly reports analyzing articles in academic journals and practitioner publications.
Prerequisites: Minimum of 18 graduate credits (excluding foundation courses); available to full-time students only and subject to availability and eligibility; permission required, see program director or Office of Career Services for details.

FAS797 **1-3 credits**
Selected Topics

FAS798 **3 credits**
Independent Study
Students may select to pursue an independent project or research topic. Approval is required, see appropriate form online on the University Registrar's web page http://www.philau.edu/registrar/ for more information.

FAS923 **2 credits**
Thesis Preparation
The course incorporates the initial steps of developing a thesis in a selected area of concentrated study including: a thesis proposal, a review of the relevant academic and/or professional literature, developing an outline, and writing the first chapter. The student will establish a dialogue with their Thesis Committee Chair, meet with the Chair periodically for guidance throughout this process and adhere to the deadlines for all of the required submissions, A minimum grade of B- is required to receive credit for this course.

FAS941 **4 credits**
Project Thesis
The thesis should be the result of original investigation of relevant literature in the field of apparel and/or retail. The thesis should exemplify original scholarship and critical judgment while examining a topic in depth. A successful thesis will demonstrate the student's abilities in collecting and evaluating information, critically examining existing theories and then constructing testing and defending a coherent argument. The thesis must be organized, demonstrate clarity of purpose, reveal evidence of critical analysis, and include complete and accurate citations and documentation for all sources.

Since the thesis is the culmination of rigorous preparation as developed in Thesis Preparation and should only be attempted in the final semester of the program. In consultation with the Thesis Committee Chair and its members, the student will complete the writing of the thesis according to the University Guide for the preparation of Doctoral Dissertations and Master's Thesis December 2007 that was begun in FAS923 Thesis Preparation.
The thesis must be a minimum of 40-50 pages in length, not including figures, tables and graphs using the most current Philadelphia University Guide For The Preparation Of Doctoral Dissertation And Master's Theses document. Thesis guidelines available at http://www.philau.edu/gradstudent/
Prerequisite: FAS923 Thesis Preparation

FASF501 **3 credits**
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.

FASF505 **3 credits**
Apparel 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-

FASF 510 **3 credits**
Apparel Work Measurement
The fundamentals of rate setting, productivity measurement and methods analysis and improvements are studied. The use of standard data including methods-time-measurement, scientific operator training and similar industrial engineering techniques are covered. Learning tools, with emphasis on videotape, are studied and used. Laboratory work stresses practice by student.
Prerequisite: FASHMGT-305

IARCP501 **0-8-4**
Design I for I.A.
(Required for those with unrelated undergraduate degrees.) This studio course is an introduction to design for graduate interior architecture majors who have not had previous design experience. It will focus on fundamental design principles and vocabulary, process methodologies and problem-solving strategies. Lectures and demonstrations stress abstraction as a primary building block in addition to an emphasis on historical case-study methodologies to investigate successful design strategies.

IARCP502 **0-8-4**
Design II for I.A.
(Required for those with unrelated undergraduate degrees.) 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 sociocultural 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.
Prerequisites: Design I for I.A. and Graphic Representation

IARCP503 **1-4-3**
Graphic Representation
(Required for those with unrelated undergraduate degrees.) This course focuses on the fundamentals of creative graphic representation. Specific topics of emphasis include the construction of orthographic and paraline projections including floor plans, elevations, sections and one-point and two-point perspective drawings.

IARCP504 **1-4-3**
Visual Communication I
(Required for those with unrelated undergraduate degrees.) 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: visualizing design concepts and communicating those concepts in a manner consistent with studio-level work. Additional emphasis will be given to successful strategies for rendering, composing and accurately communicating sophisticated design intentions.
Prerequisites: Design I for I.A. and Graphic Representation

IARCP505 3-0-3
History of Design I for I.A.
(Required for those with unrelated undergraduate degrees.) This lecture course surveys key examples of Western and non-Western architecture and interiors produced from prehistory through the 19th century. By tracing significant historical themes students compare and contrast the various historical styles and acquire a working vocabulary for both analyzing and evaluating the built environment, as well as painting, sculpture and the decorative arts. Works are placed within a broad historical context by considering factors such as religion, philosophy, iconography, the role of the artist/architects, political and economic systems, materials and techniques, and construction methods.

IARCP508 2-2-3
Presentation Techniques
(Required for those with unrelated undergraduate degrees.) This course explores different presentation techniques for interior architecture. It consists of skill building and experimentation in manual and digital techniques. This course also discusses the changing and appropriate role of visual and verbal presentation in all stages of the design process.
Prerequisites: Design I for I.A. and Graphic Representation

IARC601 0-6-3
Design III-A for I.A. – Abroad (required)
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.
Prerequisite: Design II for I.A.

IARC603 3-0-3
History of Design II for I.A. – Abroad (required)
This course is an overview of the major movements and theoretical concepts of 20th-century design. In-depth discussions and site visits to prominent case studies will focus on how societal and environmental influences, politics, economics, science and technology, psychology, etc., have shaped the greater context for architecture, interiors and the allied arts. An emphasis is placed on critical analysis and comparisons to contemporary building aesthetics and methods.
Prerequisite: History of Design I for I.A.

IARC605 0-6-3
Design III-B for I.A. (required)
This studio focuses on mid-sized 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: Design II for I.A.

IARC606 0-12-6
Design IV for I.A. (required)
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 advanced sustainable-design principles. Holistic development of concept, current sustainable-design solutions, large-scale space planning, materials, construction details, lighting design, building systems, building codes, handicapped accessibility and furnishings are emphasized in the completed design presentation.
Prerequisite: Design III-A and III-B for I.A.

IARC607 2-2-3
Technology I for I.A. (required)
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: Design II for I.A.

IARC608 2-2-3
Technology II for I.A. (required)
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 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 environments, fire safety, ergonomics and materials regulations.
Prerequisite: Technology I for I.A.

IARC610 3-0-3
Materials and Textiles (required)
This course introduces the role of interior finish materials and textiles in the creation of commercial and residential interiors. Key topics include the selection, specification, and application of textiles and finish materials based on their properties and performance criteria; sources of textiles, fabrics and finish materials; the concept of sustainable resources; appropriate installation and maintenance requirements; codes; regulations and standards; and estimating material requirements such as carpeting, wallpaper and ceiling finishes.

IARC701 0-6-3
Design V for I.A. (required)
This studio explores emerging topics in the field of interior architecture. It focuses on integrating innovative materials and technologies with an emphasis on the building crafts. Students will concentrate on the roles of construction techniques, material selection, and ergonomics in the design

process and detailing. Students will apply this information to in-depth design studies and detailing in one or more design projects.
Prerequisite: Design IV for I.A.

IARC703 1-4-3
Visual Communication II for I.A. (required)
Following Visual Communication I, this advanced course focuses on building modeling software (BIM) and related documentation techniques to produce a set of interior design working drawings. Students will build their knowledge of professional interior construction and specification documentation.
Prerequisites: Design III-A & III-B for I.A., Visual Communication I

IARC707 2-2-3
Technology III for I.A. (required)
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 environments. 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.
Prerequisite: Technology II for I.A.

IARC708 3-0-3
Professional Practice and Ethics (required)
In this course, 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 contract design project.
Prerequisite: Design IV for I.A.

IARC709 1-4-3
Research and Programming (required)
This course covers standard and emerging methods of research and programming in the field of interior design and architecture. Within a given or selected area of concentration students will produce in-depth research, precedent studies, programming and analysis. They will be expected to organize and synthesize this information and to hypothesize and propose solutions to design problems. These design problems will address issues such as cultural, sociological, political, economic, environmental, anthropometric, human factors, life safety, and construction methods and technologies, among others. Students will document their research in both written and graphic form and present it to a select group of jurors with expertise in their area of research. This research will be used to inform their thesis work in the subsequent semester.
Prerequisite: Design IV for I.A.

IARC710 0-12-6
Capstone Project for Interior Architecture (required)
Building on one semester of research and programming (INTARC-7**), the Thesis in Interior Architecture challenges students to integrate knowledge and skills acquired throughout the core curriculum and can be undertaken only after successful completion of appropriate coursework. Students have an option of pursuing this culminating experience using either applied or theoretical research.

This major culminating design experience is a self-directed, faculty-monitored independent study appropriate for students interested in exploring the creative/design dimensions of Interior Architecture. Students select one project from a range of carefully screened design projects of appropriate and comparable scope, sophistication and complexity.
Prerequisites: Design V for I.A., Technology III for I.A., Visual Communication II for I.A., and Research and Programming

IARC791 0-0-1
Internship for I.A. (required)
An 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 will 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. *Requirements may apply, see program director or Office of Career Services for details.*
Prerequisite: Design IV for I.A.

IDD610 3 credits
Introduction to Digital Audio Production
This course introduces students to basic and intermediate digital audio concepts and skills for use in a broad array of multimedia, including instructional applications. Students will generate a variety of professional-grade digital audio artifacts using industry-standard software and processes; instruction will focus on common elements of digital audio production to allow transfer of knowledge to various tools and platforms rather than focusing solely on the mastery of a single tool. Course topics include basic digital audio theory, comparing and selecting input and output devices, non-linear editing, mixing and mastering, multi-tracking, audio for video, and optimizing audio for different delivery methods. Students will create at least one example of instructional audio to use in their portfolio.

IDD621 6 credits
Digital Experience Design
This first studio in the sequence of three will develop the student's ability to synthesize 2D, 3D and 4D conceptions of space with knowledge and skills of interactivity to create and produce the digital experience. This studio will solidify and expand the student's vocabulary and ability to innovate within the digital context. Students will complete a project that explores spatial, emotional, informational and

communicative issues. The project should reflect a high degree of conceptual, aesthetic and technical mastery for successful completion of this course.
Prerequisite: Admission into the Master of Science in Interactive Design and Media program

IDD623 **3 credits**
Theory of Electronic Communication Seminar II
This course provides students with a theoretical understanding of the role of the Interactive 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. A portion of this course will be taught using the Internet as a tool to share information, complete research and communicate with experts in the field.
Prerequisite: Admission into the Master of Science in Interactive Design and Media program

IDD624 **3 credits**
Multimedia
This elective will focus on expanding the student's understanding of and ability to create effective multimedia experiences. A semester-long project will develop their mastery of visual, audio, temporal and kinesthetic elements and principals of design. The project will explore the methodology and tools used to create sophisticated experiential design. Some key concerns of the course are human-centered interfaces, intuitive navigational systems and mixed-media narrative. Projects will combine text, sound, images and movement within 4D-responsive environments. A final, fully functional prototype, presented on CD-ROM, will be required.

IDD625 **3 credits**
Advanced Web Design and Strategy
This course will focus on the design of the online experience. Emphasis will be given to an understanding and mastery of the design issues involved in creating user interfaces and content for low bandwidth dissemination. A semester-long project will develop the student's abilities in both the design and production of web-based media. The project will include components such as site architecture/planning, digital imaging and typography for the web, interface design, and XHTML and CSS production.

IDD626 **3 credits**
Digital Photography
This elective course focuses on the use of the tools and techniques of digital photography; cameras, scanners, printers, along with the computer and software programs needed to render images. This course is intended for Web and e-designers, as well as graphic designers, and teaches how to render digital images for their respective domains. The course contains a brief description of traditional photography and the aesthetic issues addressed in its history along with how these issues are both similar and different from those of digital photography. Particular emphasis will be placed on the difference between description and suggestion and how this impacts the interpretation of images within a design context.

IDD627 **3 credits**
Digital Video Design and Production
This course will introduce the student to the basics of non-linear digital video and audio production techniques. Projects will focus on the potential of narrative as a main component of any time-based media application, with assignments ranging from short exercises in visual storytelling/narrative to a final, more complex project such as the design of a video title sequence. Students will develop an understanding of storyboarding, scene visualization and editing techniques, along with competency in video and audio software packages such as Final Cut Pro, After Effects and Pro Tools.

IDD628 **3 credits**
3D Modeling
This elective course exposes students to the conceptual and technical aspects of three-dimensional modeling, photo-realistic rendering 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 NURBS modeling, texturing, lighting, and animation.

IDD629 **3 credits**
Introduction to Flash
This course will explore the use of Macromedia Flash to create instructional materials for CD-ROM or Web delivery. Students will create scaleable vector graphics, develop animated and interactive elements, use ActionScript to control these elements and learn design principles appropriate to the effective use of Flash elements.

IDD631 **6 credits**
Digital Innovation Design
This second in a sequence of three studios focuses on the ability of individual designers to pursue innovation. This course is comprised of several projects which highlight the role that interactive designers play in the multi-disciplinary attempt to bridge the gap between functionality and usability. Students will address current interface design issues through a series of screen-based projects, each ranging in complexity and theme, and placing particular emphasis on the visual and semantic aspects of design solutions. Students will be expected to seek new ways to navigate through 4D environments, challenging common interface paradigms. They are encouraged to build 4D spaces that are expressive, dynamic and experiential, while retaining their intuitive usefulness.

IDD632 **3 credits**
Database Management and Scripting
Using PHP, students will learn fundamental server-side scripting concepts like creating arrays and functions, automating Unix commands, gathering and processing user input, and dynamically writing out XHTML and JavaScript. Relational Database concepts are covered and students will

learn to conceptually model data and to create, query, and manage their database using SQL. The course will culminate with the students, for their final project, creating a web application that ties XHTML front-end to a MySQL database using PHP.

IDD635 **3 credits**
Interactive Narrative/Drama
Under development.

IDD743 **3 credits**
Flash Action Scripting
This course is a continuation of Introduction to Flash. Basic Flash interactivity and action scripting will be covered in depth. Topics covered in this course will include advanced interactivity, navigation tricks, variables, looping and decision-making, sound and sprites.
Prerequisite: IDD629

IDD791 **3 credits**
Internship
Internships provide 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 their program and/or career goal, develop learning objectives and complete reflective academic assignments. Students should be exposed to a broad spectrum of professional practices, particularly those not available in the academic setting, and are expected to make a professional contribution to their employer. *Requirements may apply, see program director or Office of Career Services for details.*

IDD798 **3 credits**
Independent Study & Research
This course will allow students to pursue individual areas of interest while working jointly with a faculty member. Enrollment is subject to the availability and approval of both the program director and faculty member. The student must have 18 or more graduate-level credits, and a prospectus of the proposed independent study must be approved at least one month prior to registration. See appropriate form available online at Registrar's website, http://www.philau.edu/registrar/ .

IDD941 **3 credits**
Interactive Design Synthesis Project Preparation
This course is the first step towards completing the final synthesis project. Students will be asked to identify and analyze potential projects through a number of lenses including technical feasibility, marketability and design potential. With faculty guidance, each student will select a particular project based upon individual interests and professional aspirations. In order to successfully complete this course, a final document must be submitted by the student outlining the relevant factors that will determine the route to developing a successful synthesis project.
Prerequisites: IDD621, IDD623

IDD942 **6 credits**
Interactive Design Synthesis Project
This is the third of a sequence of three studios focusing on interdisciplinary interactive design. This synthesis studio will develop the ability of the interactive designer to successfully bring an interactive design project to completion. Students will develop a final, working prototype of a product, service, entertainment or publication of their choice that synthesizes all of their knowledge and skill from the previous semesters. The final project must demonstrate marketability and/or successful functionality within the larger community.
Prerequisites: IDD631, IDD941

IDF500 **3 credits**
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

IDF502 **3 credits**
Foundations in Web Design and Strategy
This course will focus on the principles of raster and vector electronic imaging as a means to provide a solid foundation needed to succeed in the interactive design field. This is a lab-based class with specific instruction in Adobe Photoshop and Adobe Illustrator. This is a foundation course that does not count for credit toward the graduate degree.

IDF503 **3 credits**
Theory of Electronic Communication I
This course introduces students to the theoretical understanding of the role of the interactive designer. Special focus will be placed on how our existing culture has been, and is currently being, revolutionized by the information revolution. This is a foundation course that does not count for credit toward the graduate degree.

IDF505 **3 credits**
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

IDF506 **3 credits**
Application Software
Using Windows and Mac platforms, this foundation course will focus on experiences which will familiarize students with instructional applications and personal productivity uses of microcomputers. Word processing, database management, spreadsheets, graphic tools and telecommunications will be analyzed in terms of their application to business and

education. The skills presented in this course are prerequisites for all other courses offered in the Instructional Design and Technology program. This is a foundation course that does not count for credit toward the graduate degree.

IDF507 **4 credits**
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.

IDF508 **3 credits**
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.

IDF509 **3 credits**
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

IDF510 **3 credits**
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

IDF511 **6 credits**
Interactive Design III
This studio will explore the translation of the three- and four-dimensional concepts into two-dimensional screen images, interactivity and animation. Students will be introduced to the theory and practice of motion graphic production. The mediums of choreography, filmmaking, architecture, performance art, and music will be discussed as potential sources of inspiration for creating new and powerful forms of digital space and experience. A series of increasingly complex projects will culminate in a more demanding final project.

IDF512 **6 credits**
Interactive Design IV
This studio will develop the ability of the digital designer to successfully participate within an interdisciplinary team. Students from a variety of majors will work together 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 studios. The students will develop a final project that demonstrates marketability and successfully functions within the larger community. This is a foundation course that does not count for credit toward the graduate degree.
Prerequisite: IDF511

IDF513 **4 credits**
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

IDF514 **3 credits**
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.

IDF515 **6 credits**
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

MBA625 **3 credit**
Management Communications and Negotiations
This course covers the concepts and art of effective management communications and negotiations in the business

environment. The total communications process — verbal, nonverbal, presentation, written and electronic — is reviewed in the context of today's work environment. The perspectives and needs of top management, interactive teams, individual contributors, and clients are examined and translated into professional practices. Experiential exercises and class discussions will build participants' understanding of styles and skills in negotiating. Coursework will focus on the uses of power, influence, and negotiating styles, methods of conflict resolution and means of influencing others.
Prerequisite: all MBF courses or equivalents

MBA626 **3 credits**
Management in a Global Environment
This course examines topics relevant to management in global and culturally diverse organizations. Unifying themes such as globalization and sustainability are used to explore organizational change, technology, and ethics and social responsibility. The course also addresses issues such as communication, group dynamics, motivation, leadership, and decision-making in organizations. Readings and cases illustrate managers' dynamic roles and responsibilities with respect to globalization, and within a global environment.
Prerequisite: all MBF courses or equivalents

MBA627 **3 credits**
Management of Information Through Technology
This course will focus on the latest technological advances for managing data and communications effectively. Students will acquire the skills and concepts necessary to use a system to handle data efficiently for large and small organizations, national or international in scope. Network technology and usage of computer networks, as well as ethical and security issues will also be addressed. The concepts of telecommunications and the costs and benefits associated with this transmission of information will be explored. Methods of instruction include hands-on/application orientation.
Prerequisite: all MBF courses or equivalents

MBA628 **3 credits**
Accounting for Management Decisions
This course provides students previously exposed to financial and managerial accounting principles an opportunity to study the structure and use of accounting systems designed to aid management in controlling costs and profits. The course stresses the following: financial statement interpretation as a basis for decision making; cash flow analysis; cash budgeting; cost volume profit analysis; costing and interpretation of manufacturing systems; and the impact of international competition, responsibility accounting and the impact of inflation.
Prerequisites: all MBF courses or equivalents

MBA629 **3 credits**
Financial Policy and Planning
This course focuses on the investment and financing decisions of firms. Topics include capital budgeting, cash management and cash flow analysis, capital structure, dividends and international operations. Financial policy making is considered within the context of contemporary valuation and risk management theories. Various financial planning models are analyzed in the course.
Prerequisites: all MBF courses or equivalents

MBA630 **3 credits**
Quantitative Methods in Decisions
This course will focus on the mathematical models and methods available for use in formulating and analyzing business decision-making problems in industry. Areas of study include: probability theory, decision analysis, game theory, forecasting techniques, project management, queuing models, allocating scarce resources using linear programming and integer-programming techniques, and deterministic and probabilistic inventory models.
Prerequisite: all MBF courses or equivalents

MBA632 **3 credits**
Strategic Marketing Management
This course allows students to develop skills in dealing with strategic marketing problems found in both profit and nonprofit settings. The course presents a framework for developing a strategic marketing plan over the product life cycle with emphasis on consumer and environmental analysis. Market segmentation, product positioning, marketing responsiveness and competitive reaction will be explored.
Prerequisite: all MBF courses or equivalents

MBA642 **3 credits**
Strategic Planning in a Global Environment
This course will focus on the design and implementation of a strategic plan in global industries and the importance of such a plan in dealing with the many challenges facing organizations in the years ahead. Strategic planning models and research findings will be investigated. During the semester, students will analyze strategic threats and opportunities which confront corporate-level executives as well as managers of business units. Students will work in teams on the development of a strategic plan for a local profit or nonprofit organization. The focus will be on developing effective strategies which clarify the future direction of the chosen organization and deal with the rapidly changing environment. Strategic plans will be presented in oral and written form to the organization. This is a capstone course and students will draw from the knowledge they have gained throughout the M.B.A. program. Extensive written individual and team assignments and oral presentations are included.
Prerequisite: All core MBA courses must be completed or taken concurrently.

MBA700 **3 credits**
Accounting Theory & Applications I
An in-depth study of current accounting issues and pronouncements, including long-term debt and troubled debt restructuring, accounting for leases, pension and post-retirement, income tax accounting, price-level adjusted financial statement reporting, and accounting for partnerships (equity, admission, profit and loss sharing, and liquidation).
Prerequisite: MBA628

MBA701 **3 credits**
Accounting Theory & Applications II
A continuation of Accounting Theory & Applications I, including the study of accounting for business combinations (purchases and pooling of interests), accounting for the translation or remeasurement of foreign subsidiary financial statements into dollars to meet business combination reporting requirements, accounting for transactions denominated in a foreign currency (including purchases, sales, and hedges), and analysis of financial statements.
Prerequisite: MBA700

MBA702 **3 credits**
Accounting Information Systems
Examines the principles of computer-based accounting information systems and their role in the business firm. This course provides an overview of information systems, designing and implementing new system controls and their impact on the decision-making process.
Prerequisite: MBA701

MBA703 **3 credits**
Auditing Theory and Philosophy
A study of the development of financial compliance and operational auditing techniques, including analysis of current issues in the auditing profession such as audit risk, ethical conduct, materiality, audit sampling procedures, and reporting issues. These areas will be studied with reference to pronouncements of the accounting profession and current literature. The study of operational, as well as financial compliance auditing, will be enhanced using case studies and examples.
Prerequisite: MBA701

MBA704 **3 credits**
International Accounting Issues
Examines financial accounting, reporting, and auditing requirements and issues in foreign environments on a comparative basis; current literature on the development of international accounting and auditing standards; and managerial planning and control of multinational firms. The study of international accounting, reporting and auditing standards will be enhanced through the use of case studies comparing the development of these standards in different countries.
Prerequisite: MBA701

MBA705 **3 credits**
Issues in Advanced Accounting
An in-depth study of selected accounting topics, including bankruptcies, estates and trust; SEC reporting; and non-profit accounting for state and local governments, colleges and universities, hospitals and other health care facilities; and other non-profit entities. Course includes case studies, using pronouncements of the Financial Accounting Standards Board, the Governmental Accounting Standard Board, and the American Institute of C.P.A.s.
Prerequisite: MBA701

MBA710 **3 credits**
The Global Consumer
The concept of the global consumer or global brand is one of the most emphasized topics in retailing today. Building and managing a successful product in the international arena is extremely important and strong product marketing is evident in successful global firms such as Volkswagen, HP, Canon, Southwest Airlines and Caterpillar. Students will explore product strategies and learn the key steps of the analytical process to grow a product globally. Key topics include: Global Product Development, Global Services Marketing and Global Branding.
Prerequisite: all MBA courses or equivalents

MBA 711 **3 credits**
Global Retailing Marketing Management
This course is an overview of the retail industry which will provide students with a broad and conceptual understanding of the retail industry in the global economy. The course will include such topics as: overview of the retail industry, structures and strategies, multiple channels of distribution, global consumer, consumer relationship management, financial functions, marketing communications strategies, human resource management, merchandise planning, control and pricing strategies.
Prerequisite: all MBF courses or equivalents

MBA712 **3 credits**
Global Supply Chain
The concept of a global supply chain or global value chain is one of the most emphasized topics in retailing today. Building and managing a successful retail strategy in the international arena is potentially the most challenging and rewarding endeavor an organization can undertake. Students will learn to define measurable objectives and develop strategies to promote supply chain efficiencies, while focusing on key “hot button” areas of management and decision making in today’s international marketplace. Key topics include: outsourcing and right sourcing strategies; partnering; and the concept of global brands.
Prerequisite: all MBF courses or equivalents

MBA714 **6 credits**
Global Supply Chain
This course provides methodology for discovering new business opportunities and product road map decisions. It is intended for students with interest in innovative product development, entrepreneurship, and technology development. The course follows an overall product design methodology, where students partake in innovation games and charrette exercises, identify customer needs and generate product concepts, including prototyping and design-for-manufacturing. Weekly student assignments are focused on the design of a new product, and culminate in the creation of a

prototype and submission of a business plan.
Prerequisite: MBA627 and permission of the instructor

MBA720 3 credits
Accounting and Financial Management for Health-Care Institutions
This course examines accounting and financial concepts as they apply to health care institutions. Financial reporting, cost accounting, fund accounting budgeting and cost benefit analysis are analyzed in the context of health-care institutions.
Prerequisites: MBF504 and MBF505 or equivalents

MBA721 3 credits
Legal Aspects of Health-Care Management
This course examines the growing importance of legal matters in health-care management from the administrator's perspective. Topics include negligence law, medical staff organization, discipline, peer review, patients' rights, labor law, contract law, legal structure of health-maintenance organizations and a legal view of social issues in the health field.
Prerequisite: MBF511 or equivalent

MBA722 3 credits
Marketing of Health-Care Institutions
This course examines the ever-increasing need to apply marketing strategies to health-care institutions. Specific areas of investigation include an examination of the differences between the marketing services provided by health-care organizations versus traditional product marketing, and the application of marketing theories and concepts to the development of successful strategies for health-care organizations.

MBA723 3 credits
Managed Health Care
This course explores the organization and management of health-maintenance organizations and other types of managed-care systems, and looks at alternatives to hospitalization such as HMOs, community-based services and outpatient clinics.

MBA724 3 credits
Long-Term Care Administration
This course explores the administrative and operational issues of services provided in long-term health-care facilities. Issues associated with the care of the elderly population in the U.S., including inpatient and outpatient care, as well as community-based programs, will also be covered. There will be an emphasis on services for the elderly, chronically ill and disabled. Differences between acute and long-term levels of care, types of long-term care facilities and special concerns of the long-term care resident will be covered.

MBA725 3 credits
Emerging Health Issues
This course provides an in-depth study of current topics in health care. Topics to be explored will be announced when the course is offered and may include health-care reform, ethical issues in health care, world-wide and local social gerontology issues and labor relations in health care.

MBA726 3 credits
Health-Care Risk Management
This course provides students with an overall understanding of the various responsibilities and issues important to health-care risk managers. The course will explore the elements of an effective risk-management program and specific risk-management areas, including learning how to identify and control risk from a variety of perspectives. Course content will include legislative and regulatory concerns; risk management; interaction with the board of trustees, medical staff, nursing staff and others within and external to the health-care setting; contract review; employment issues and record keeping.

MBA740 6 credits
International Business
By focusing on all aspects of conducting business in a global environment, this course will acquaint students with the theories, concepts, practices and techniques in conducting business abroad. A strong emphasis is placed on cultural, ethical and political issues as their impact on managing multinational operations. A required overseas trip will expose students to a number of foreign cultures and businesses. Students will spend approximately two weeks meeting with business, government and labor leaders, as well as academicians in European or Asian countries. Teaching methods include lectures, case analysis, simulations, role playing and significant current outside readings. Offered in spring semester only.
Operational details: If a student misses the scheduled trip, the student will receive an "I" for the course and must go on the next available trip. If the trip is completed but the course is failed, a student must repeat MBA740 (excluding the trip) for three credits and take another elective or repeat the entire course including the trip. The cost of the overseas trip is not included in the tuition for this course.
Prerequisite: All foundation courses

MBA741 3 credits
Financial Accounting & Reporting I
An in-depth study of current accounting issues and pronouncements, including long-term debt and troubled debt restructuring, accounting for leases, pension and post-retirement, income tax accounting, price-level adjusted financial statement reporting, and accounting for partnerships (equity, admission, profit and loss sharing, and liquidation).
Prerequisite: MBA628

MBA742 3 credits
Financial Accounting & Reporting II
A continuation of Financial Accounting & Reporting I, including the study of accounting for business combinations (purchases and pooling of interests), accounting for the translation or remeasurement of foreign subsidiary financial statements into dollars to meet business combination reporting requirements, accounting for transactions denominated in a foreign currency (including purchases, sales, and hedges), and analysis of financial statements.
Prerequisite: MBA741

MBA743 **4 credits**
Audit and Attestation
A study of the development of financial compliance and operational auditing techniques, including analysis of current issues in the auditing profession such as audit risk, ethical conduct, materiality, audit sampling procedures, and reporting issues. These areas will be studied with reference to pronouncements of the accounting profession and current literature. The study of operational, as well as financial compliance auditing, will be enhanced using case studies and examples.
Prerequisite: MBA742

MBA750 **3 credits**
Information Architecture
In this course, students will learn the definition of information architecture (IA), how IA fits into the overall software development process and the critical steps and deliverables for IA. First, students will conduct user research and develop user profiles/persona, which will help define the target user for their website. Next, students will map out high-priority user scenarios based on both the user's needs and the business/organization goals. Next, students will develop the information architecture for a website and produce a site-map diagram. Once the site map is complete, students will build a "clickable" wireframe prototype and task script that will be used for usability testing. Finally, students will produce a full set of wireframes for their website incorporating all the learning from user research and usability testing.

MBA751 **3 credits**
Management of Technological Change
Technological change is widespread within and among today's organizations. This course will examine the effects of that change on organizations and their members. The academic and professional literature describing the influence of technological change on organization structure, group processes and individual workers will be reviewed and analyzed. Participants will examine an assortment of techniques for avoiding the productivity declines sometimes associated with the introduction of new technology. These tools include task design, training, reward system, worker participation, leadership development and other techniques.
Prerequisite: all MBF courses or equivalents

MBA752 **3 credits**
Total Quality Management
Total Quality Management (TQM) embraces a certain philosophy, practices, tools and standards for continuous improvements of process, product and people. Lecture and discussion topics include the introduction to quality control and the total quality system; philosophies and their impact on quality management: practices, tools and standards; fundamentals of statistical concepts and techniques; graphical methods of data presentation; statistical process control; acceptance sampling; reliability; experimental design and the Taguchi Method and quality in the service sector. Assignments include problems and reports.
Prerequisites: MBA630 or equivalent and all MBF courses

MBA757 **3 credits**
Management of Innovation and Entrepreneurship
This interdisciplinary seminar focuses on the sources of change and innovation in the business environment and strategies for managing change, especially in dynamic environments. The seminar will review the impact of technological innovation as well as social, economic and cultural change on management strategy. Topics include a systems framework for understanding the types of change, purposeful entrepreneurship, reframing as a change management tool and the practice of innovative leadership in diverse organizational settings.
Prerequisite: MBA626

MBA758 **3 credits**
International Perspectives of Human Resource Management
This course introduces students to the key principles, concepts and techniques involved in identifying and solving people-related business problems in international enterprises. Strategic thinking and environmental-scanning skills will be developed and applied beyond national borders through lectures, discussions, interactive exercises, cases and projects. The impact on management practices and strategies of culturally based differences in values and attitudes will also be examined. The course will focus on critical human-resource issues of special interest to today's transnational careers, selection of expatriates, repatriation, and global succession planning, management education, training and development.
Prerequisite: MBA626

MBA759 **3 credits**
Entrepreneurship
This course will provide an overview of the major elements of entrepreneurial activity including planning and evaluation of the business, financing, typical operating and administrative issues and alternatives for growth and sale. Entrepreneurial opportunities and challenges will be examined and a variety of venture opportunities will be analyzed. The course will give students a realistic look at the challenges involved in starting a viable business and help students in a personal evaluation of their own skills, talents and career potential. Utilizing business planning software, each student will prepare a comprehensive business plan for a business opportunity the student selects and perceives to be viable and practical. The plan may be utilized for presentation to potential investors.
Prerequisite: All foundation courses

MBA761 **3 credits**
Promotion Management
This course focuses on the promotion and communication decisions of corporations and how to employ promotion strategy to solve marketing problems and enhance opportunities. Advertising, sales promotions, publicity, public relations and personal selling are investigated.
Prerequisite: MBA632 or equivalent and all foundation courses

MBA762 **3 credits**
Marketing Research
This course focuses on the collection and use of data to support marketing decisions. Students will learn how to formulate the research problem, design the research and collect the data. Various techniques used for analyzing data will be examined. Students will be required to conduct a research study during the semester.
Prerequisites: all MBF courses or equivalents and MBA632 or equivalent

MBA764 **3 credits**
Global Marketing
This course examines the challenge of entering and operating effectively and efficiently in international markets. The impact of macroenvironmental factors (cultural, legal, political, etc.) on the development of marketing strategies for both consumer and industrial products will be discussed. Students will explore to what extent an organization should follow a country-specific marketing strategy as opposed to a global strategy.
Prerequisite: MBA632 or FAS731 or equivalent

MBA766 **3 credits**
Business-to-Business Marketing
Marketing of goods and services to organizations including industrial firms, service organizations, producers of consumer goods, government institutions and retail trade is explored. Characteristics of these markets, and techniques and processes used to effectively reach these markets, are investigated. The course focuses on organization buying behavior, buyer and seller relationships, market analysis and planning, and the development of marketing strategies.
Prerequisite: MBA632 or equivalent and all MBF courses

MBA771 **3 credits**
Financial Markets and Institutions
In this course, students will study money and capital markets and the managerial and environmental problems facing these markets, including regulation and supervision by government.
Prerequisite: MBA629 and all MBF courses

MBA772 **3 credits**
Investment and Portfolio Management
This course will acquaint the student with the tools essential for sound money management. Investment management begins by considering the goals of an investor with respect to risk exposure, the tax environment, liquidity needs and appreciation versus income potentials. Strategies will be developed to satisfy these objectives. Special attention will be paid to the theories of determinants of asset prices, including the capital-asset pricing model.
Prerequisite: MBA629 and all MBF courses or equivalents

MBA774 **3 credits**
International Finance
This course will examine international financial economics and the international financial system, with emphasis on the theories, techniques and practices relevant to international financial management. Topics include balance of payments, foreign exchange markets and risk, cash flow operations and portfolio effects of capital budgets for multinational and international capital markets. Students will explore problems involved in the financial management of multinational firms including environmental problems; organizing for optimal results; sources and uses of funds; and accounting, tax and control issues.
Prerequisite: MBA629 and all MBF courses or equivalents

MBA775 **3 credits**
Seminar in Finance
This course will address a number of developments in contemporary finance, such as mergers, acquisitions, divestitures, leveraged buy-outs and equity and debt financing. Non-traditional financing methods will also be explored.
Prerequisite: MBA629 and all MBF courses or equivalents

MBA776 **3 credits**
Speculative Markets
This course is intended to introduce students to financial futures, options and swaps. The objective of this course is to clearly explain why these securities exist and how to accurately price them. The course will present a balance of the institutional details, theoretical foundations and practical applications of this field.
Prerequisites: MBA629 and MBA772 and all MBF courses or equivalents

MBA777 **3 credits**
Fixed Income Securities
This is a highly specialized course that focuses on the fixed income market with emphasis on the bond market. Topics include pricing of bonds, bond price volatility, types of fixed income securities, term structure of interest rates and bond portfolio-management strategies. Various fixed income products are analyzed in the course, including some derivative products in the context of fixed-income securities.
Prerequisite: MBA629 and all MBF courses or equivalents

MBA778 **3 credits**
Commercial Banking
This course provides an overview of the history of banking progressing to the banking of today. Banking is the management and evaluation of risk and the balancing of the need for profitability with the safety and soundness required by the community. This course explains the rationale behind the making of loan and asset/liability-management decisions. It surveys the effect of the technological changes of the past ten years on the delivery channels for banking services. Topics for discussion include competition and the mix of banking, insurance and investment banking. The focus of the course will be on management concepts, as opposed to actual formulas and calculations. Projects and case studies will assist participants in gaining a working knowledge of banking decision making.
Prerequisites: all MBF courses or equivalents

MBA780 **3 credits**
Fundamentals of E-Commerce
This course provides an overview of the framework for conducting business in a digital value chain environment. The impact of information technology on the delivery of goods and services and the resulting infrastructure, cultural, organizational and environmental factors will be examined. Participants will develop an awareness of the range, scope and complexity of the issues and an understanding of the technical concepts of electronic commerce to gain a competitive advantage. Topics will include electronic payment issues, copyright protection, governmental regulations, taxing structures, pricing and product strategies, and market and product development in electronic commerce systems.
Prerequisite: all MBF courses or equivalents

MBA791 **3 credits**
Internship
Internships provide students with an opportunity to apply and further develop the knowledge they have gained in the classroom. Under faculty supervision, students work in salaried positions related to their career goals. While on their assignments, students develop meaningful learning objectives, attend an internship seminar, complete challenging assignments, and write bi-weekly reports analyzing articles in academic journals and practitioner publications.
Prerequisites: Minimum of 18 graduate credits completed (excluding foundation courses); available to full-time students only and subject to availability and eligibility; permission required, please see program director or Career Services Office for more information.

MBA792 **3 credits**
International Business Trip
The focus of this course is visiting representatives of U.S. and non-U.S. businesses in various industries abroad. The international business trip will span approximately two weeks. Students will meet with business executives, government officials, labor leaders and academicians in specific industries abroad. Students will gain an appreciation for both the formal business aspects and informal social aspects of conducting commerce in foreign countries.
Registration requires permission of the Graduate Business Programs Office.

MBA797 **1-3 credits**
Selected Topics
Content will vary in response to current issues.

MBA798 **3 credits**
Independent Study
This course provides students with an opportunity to pursue areas of interest while working jointly with a faculty member. Subject to availability and approval. See appropriate form online on the University Registrar's web page http://www.philau.edu/registrar/ for more information.

MBF503 **3 credits**
Foundations of Economic Analysis
This course introduces key economic concepts and tools for managers in the public, private and not-for-profit sectors. By applying economic theory to business problems, managerial economics develops general principles that can be applied to business decision making. Topics include the goal of the firm, decision-making techniques, marginal analysis, classical optimization, demand analysis, forecasting techniques, production and cost analysis, price determination and market structure. The role of government to provide a stable institutional environment, as well as the consequences of regulations, will also be covered. This is a foundation course that does not count for credit toward the graduate degree.

MBF504 **3 credits**
Introduction to Financial and Managerial Accounting
A course designed to introduce students to the fundamentals of financial and managerial accounting. The course introduces the use of accounting information as a basis for planning, control and managerial decisions. This is a foundation course that does not count for credit toward the graduate degree.

MBF505 **3 credits**
Financial Management
A survey of the principles and techniques of business financial management including the analysis of working capital, capital investments and sourcing for funds. Time value of money concepts, return and risk analysis and income taxes are considered. This is a foundation course that does not count for credit toward the graduate degree.
Prerequisite: MBF504 or equivalent

MBF506 **1.5 credits**
Marketing Foundations
This course is designed to provide the student with a broad understanding of the various marketing functions of an organization including the development, introduction, promotion, pricing and distribution of goods, services and ideas. Topics covered include consumer behavior, marketing research, segmentation, target marketing and new product development. This is a foundation course that does not count for credit toward the graduate degree.

MBF508 **3 credits**
Statistical Analysis for Business Decisions
Descriptive statistical measures and probability theory are combined to provide the basis for statistical decision-making techniques. Areas covered include: measures of central tendency, measures of variability, hypothesis testing and confidence intervals, one- and two-way analysis of variance, Chi-squares and non-parametric statistical techniques. This is a foundation course that does not count for credit toward the graduate degree.
Prerequisite: MBF501 or equivalent

MBF509 **1.5 credits**
Management Concepts
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. This is a foundation course that does not count for credit toward the graduate degree.

MBF510 **3 credits**
Operations Management
This course is designed to provide students with an understanding and working knowledge of the latest quantitative tools needed to participate in, contribute to and enhance the corporate decision-making process. The focus of the material will be on the use and application of quantitative skills without the theoretical detail. Topics covered will include quality-control applications, optimization techniques (including linear programming), simplex method, transportation model and assignment model. Other topics are: time-series analysis, queuing theory and an introduction to total quality management. Computer applications, case analysis and problem-solving sets will be used extensively throughout the course. This is a foundation course that does not count for credit toward the graduate degree.
Prerequisites: MBF501, MBF508 or equivalents.

MBF511 **3 credits**
Decision Making in the Legal Environment of Business
Lecture, class discussions and case problems emphasizing the basic legal principles on the following topics: legal rights and social forces, contracts, partnerships, agency and employment, commercial paper and real property. This is a foundation course that does not count for credit toward the graduate degree.

MCM601 **3 credits**
Advanced Construction Project Management
Through detailed case studies drawn from contemporary practice, this course provides in-depth study of the principles and methods critical to the management and integration of the design and construction processes. Planning, scheduling, bidding, professional/client relationship, contractor selection and LEED accreditation are analyzed. Theoretical and practical aspects of project planning are charted, incorporating such essential steps as feasibility studies, estimating project costs, cash flows and cost control through critical path methodologies, risk analysis methods and current techniques for value engineering.

MCM602 **3 credits**
Construction Information Modeling
Technological advances within the construction industry demand that today's managers possess proficiency in current building methodologies and literacy in current computer software. This course concentrates upon the use of sustainable construction methods and materials to produce cost-effective projects with emphasis upon resource efficiency, environmental protection and waste minimization. Innovative methods of documentation and digital techniques, principally Integrated Practice and Building Information Modeling (BIM) are given comprehensive coverage, relative to the application of the software to the actualization of the built form.

MCM603 **3 credits**
Construction Law: Roles and Responsibilities
Current legal problems associated with the construction industry are investigated from management's perspective through consideration of the roles assigned to the various project participants. The entire building process from predesign to owner use is scrutinized, highlighting case law and statutory information, contractual relationships, licensing issues, design through build, bidding and procurement rules, mechanics liens, insurance and surety bonds, and liability awareness. Available methods of dispute resolution are evaluated, including negotiation, mediation, arbitration, and litigation with emphasis upon claim avoidance.
Prerequisites: MCM-601, MCM-602

MCM604 **3 credits**
Project Finance and Cost Control
Utilizing pertinent case studies, this course probes the economics of construction and analyzes project control systems used to effectively manage cost and time. Principles drawn from cognate business fields, specifically accounting, finance, and taxation, are given real-life application relative to construction projects of multiple types and scales. Key budgetary issues are examined in-depth, including financial statements and balance sheets, variance analysis and optimum cash flow methods, as well as efficient cost reporting systems. Additional topics include internal controls, financial analysis and presentation, contractor surety and lending, and fraud, with particular emphasis upon cost-effective methods to procure and deliver construction projects including lump sum, unit price, cost-plus, and design-build.
Prerequisites: MCM-601, MCM-602

MCM606 **3 credits**
Construction Risk Management
This course examines the key concepts, models, codes, tools and techniques used in managing risks within the architecture, construction and engineering industries. The course will focus on planning for the effective implementation of the risk management process, identification and qualitative and quantitative assessment of risks, appropriate strategies to respond to risks, and how to sustain the risk management process throughout the life of a construction project.
Prerequisites: MCM-601 or approval of MCM Program Director

MCM608 **3 credits**
Construction Environmental Management
This course examines the key concepts, systems, laws, tools and techniques used in managing environmental risks within the architecture, construction and engineering industries. The course will focus on environmental issues from a construction business management perspective and include analytical techniques, management processes and business

strategies that aid successful reconciliation of environmental and economic performance goals for construction operations. Through a combination of real-life cases, readings, lectures, videos, and simulations, class sessions will seek to engage students in discussions aimed at developing systems of corporate environmental management, covering compliance, environmental risk management, pollution prevention, product stewardship, supply chain management, and communication.
Prerequisites: MCM-601 or approval of MCM Program Director

MCM610 **3 credits**
Principles of 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.

MCM791 **1 credit**
Construction Management Internship
To ensure competency in the field before graduation, each student must complete 400 hours of professional construction management experience with a firm in the building industry. This requirement may be waived for entering students with equal or greater professional experience. Additional requirements may apply, *see program director or Career Services Office for more information.*
Prerequisite: MCM 602, MCM-603, MCM-604

MCM901 **3 credits**
Masters Project
Construction managers today are part of a team-oriented enterprise, working in collaboration with architects, clients, developers and sub-contractors in the conceptualization and realization of the built environment. This independent study serves as the culminating experience in the program and requires the student to translate the design intentions of the architect and the expectations of the client into sustainable built form. Working in consultation with a committee of academic and professional advisors drawn from both architecture and construction, the student must choose a specific project and produce a comprehensive manual that addresses design concerns, sustainable systems and materials, construction methodologies as well as financial, legal, and safety standards operative in each phase of the construction process. An oral defense, supported by visual documentation realized via relevant digital technologies, will be presented for review and critique by a jury of committee members, faculty and students.
Prerequisites: MCM 602, MCM-603, MCM-604, MBA-625, SDN-601, SDN-603

MMW712 **3 credits**
Introduction to Health Policy
The focus of this required course is federal health-policy development, analysis and implementation and the role of the health-care provider in influencing health policy in the United States. The student will study public health policy to understand the basics of the policy-making process and to attain a beginning knowledge of how to influence health policies. The course will focus on women's and infants' health issues as examples of broader issues in health policy.

MMW720 **3 credits**
Critical Inquiry I
Critical Inquiry I is a required course that provides the foundations of research and critical inquiry as it applies to the evaluation of scientific evidence. The course will cover the following areas: the scientific method and its limitations; multiple ways of knowing; the ethics of research; defining problems, questions and hypotheses; conceptual analysis, constructs and theory building as they pertain to clinical practice and research. The course will provide an overview of the research process, and the student will apply this knowledge in the development of Chapters 1 and 2 of a research proposal. Midwifery contributions to the scientific literature will be highlighted as examples.

MMW721 **3 credits**
Critical Inquiry II
Critical Inquiry II is a required course that provides a special focus on research methods and their applications in clinical research and evidence-based practice. Steps in developing a research proposal, a research report and an evidence-based clinical protocol are presented. Students will be expected to continue their work on a problem or question relating to midwifery practice and/or women's health, critically analyze the literature, place the issue in a theoretical context and develop an appropriate methodology to study the issue. Students may prepare a research proposal, a manuscript for publication, a grant proposal or an evidence-based clinical protocol for the final project. Or, the student may serve as a research apprentice to an experienced researcher working on a midwifery or women's health issue or as an intern to a national midwifery organization working on research-related projects that advance the profession of midwifery. Students may elect to continue their research and complete a thesis in a three-credit elective course.
Prerequisite: MMW720

MMW722 **3 credits**
Introduction to Clinical Administration
This elective course provides students with the knowledge to understand the factors that influence the success and viability of nurse-midwifery practices. The effects of the changing health-care environment on primary health-care providers will be explored. Particular attention will be paid to current issues in the health-care system. The course will examine the startup of a clinical practice either as an entrepreneurial entity or within an existing organization. Emphasis will be placed on a beginning understanding of financial accounting

statements and business plans used in the health-care industry. Students will explore the influence of political/economic milieus within and around the practice organization. In addition, students will learn practical techniques in order to develop beginning abilities in conflict resolution and contract negotiation.

MMW723 **3 credits**
Advanced Clinical Practice
This elective course is a guided independent study in advanced clinical practice. In consultation with the faculty, the student will identify a specific area of clinical practice (for example, caring for women with gestational diabetes). Intensive, focused study in this content area will be facilitated. Experiences relevant to the student's area of interest will be sought in the clinical setting. Reflection on the student's own transformation from novice to expert will be included.

MMW724 **3 credits**
Introduction to Teaching Methods
This elective course provides an introduction to teaching methods useful for midwifery educators in academic and clinical settings. Fundamentals of adult education will be reviewed. Concepts particular to midwifery education will be explored. Examination of how to identify and reach educational goals will be included for traditional models, distance education and in the clinical setting. The process of identification of student learning issues and problem solving will be included.

MMW725 **3 credits**
Issues in Reproductive Health in Developing Nations
This course will present current trends and the range/impact of problems in reproductive health in the developing world. Students will explore the context and consequences of reproductive health problems, common intervention strategies, and the critical role of health-care consultants to developing countries. The class will gain an understanding of the appropriate preparation, roles and responsibilities of international health-care consultants. As an outcome of this course, the student will be prepared to predict the potential impact of unmet reproductive health care needs in developing countries and evaluate proposed interventions.

MMW931 **3 credits**
Thesis
Students may elect to conduct their own research and complete a thesis under faculty guidance using the most current Philadelphia University Guide For The Preparation Of Doctoral Dissertation And Master's Theses document. This elective course will be based on the proposal written in Critical Inquiry II.
Prerequisite: MMW721

MSID500 **3 credits**
Skills and Methods for Industrial Design
An intensive summer workshop for graduate students matriculating without a design background. This course replicates much of the skills-based content covered in undergraduate Design I, and goes on to cover shop and prototyping issues otherwise found in Materials and Process: Shop Techniques, as well as basic materials and process selection for manufacturing. Projects are designed, but this class focuses on techniques and skills rather than the objects designed.

MSID700 **3 credits**
Research and Design Process Methods
This course gives students the tools they need to find and frame opportunities, construct successful design briefs and to evaluate design in progress, as well as exploring and documenting new research techniques. Class projects will support studio work, as well as contributing to ongoing research initiatives.

MSID703 **6 credits**
User Centered Design
This course is the first in the MSID studio sequence. This studio concentrates on user-centered design techniques, including observational/ethnographic research methods and methods incorporating users and other stakeholders into the design process. Each studio will be expected to do extensive generative research and to publicize/archive its research and conclusions.
Prerequisite: MSID500

OCC610 **1 credit**
Portfolio Seminar
This course presents the concept of a professional portfolio, the initial step in guiding students' professional development and socialization into the occupational therapy discipline. Students are introduced to the concepts of self-reflection and self-assessment, and are guided in the process of developing growth activities leading to individual competencies. Through class activities and assignments with their portfolio clients, students learn how to interview, develop a therapeutic rapport, and construct a client profile.
Prerequisite: All admissions prerequisite coursework

OCC611 **3 credits**
Foundations for Practice
Overview of occupational therapy domains of practice, including practice roles and functions, regulatory and legislative mandates and constraints, historical and philosophical foundations, ethics, the therapeutic relationship, and the professional socialization process
Prerequisite: All admissions prerequisite coursework

OCC613 **4 credits**
Functional Anatomy
Using biomechanics, kinesiology and ergonomics, students explore key human anatomical structures and their relation to each other. Classroom and applied experiences address identification of physical and sensorimotor functional capacities, goniometry, and manual muscle testing.
Prerequisite: All admissions prerequisite coursework

OCC615 **1 credit**
Assistive Device Design
Working with students from the Industrial Design program, students collaborate to design an assistive device or tool to facilitate a client's occupational performance. Through field

experiences, teaching-learning activities, discussion, and experiential assignments, students examine their evolving understanding of occupation, adaptation, and participation. Course activities include applying the principles of task analysis and universal design, and critically analyzing and synthesizing evaluation data. The culminating course project assists students to gain professional development experience and insight through the presentation of findings in a consumer-oriented forum.
Prerequisite: OCC611

OCC621 **3 credits**
Occupational Competence
Historical exploration into the nature of humans as occupational beings throughout the lifespan. Focus on occupational performance analysis, and occupation-based goal setting and intervention planning to promote an individual's occupational competence. Impact of physical, social and cultural environments on occupational choice and the ability of individuals to adapt to environmental demands are presented.

OCC623 **4 credits**
Applied Neuroanatomy
In-depth exploration of the neuroanatomical, neurochemical, neurophysiological, cognitive, motor and sensorimotor basis of brain function as it relates to human performance. Identification of major structures and functions of normal and abnormal nervous systems. Development of an understanding of the neurobiological substrates of behavior and learning. Particular emphasis is placed on the relationship of neuroanatomy to human movement, problem solving and executive functions.
Prerequisites: OCC611

OCC624 **3 credits**
Dimensions of Human Movement
Exploration of human movement through movement analysis. Emphasis is placed on developing the ability to: identify disruptions in movement patterns; suggest potential causes for the disruption; and describe the impact of these disruptions on functional performance. Students will learn to analyze the functional ramifications of abnormal movement patterns in goal-directed work, leisure and self-care activities.
Prerequisites: OCC613

OCC625 **1 credit**
Clinical Skills A
Students learn clinical skills most typically used in various practice contexts of occupational therapy. Course includes development of competencies in safe clinical practices, occupational therapy terminology, and documentation for skilled occupational therapy service. Skills are practiced in hands-on laboratory environments and then applied through Level I Fieldwork.

OCC 626 (formerly OCC744) **3 credits**
Evidence-Based Practice
This course helps students to become skillful consumers of research for the purposes of evidence-building and assessing outcomes of occupational therapy. Students are introduced to the research perspective and evidence-based practice as a basis for professional competence. Utilizing the critical appraisal process, students critique and analyze the literature to answer clinical practice questions. Course experiences include examining the basic research elements of single subject, experimental, quasi-experimental and qualitative research studies; considering ethical issues of research; developing and answering complex clinical questions; and planning, presenting and disseminating research findings.
Prerequisite: OCC611

OCC631 **3 credits**
Conceptual Assumptions for OT Practice
In-depth exploration of the major theories and frames of reference, which have shaped and informed occupational therapy practice since its inception. Emphasis is on the "Model of Occupational Performance." Frames of reference and theory-based treatment methods currently in use by occupational therapists in a variety of human-service settings will be compared. Focus on the values and beliefs that support practice decisions, as well as developing an understanding of compelling factors that contribute to practice decisions. Identification of critical occupational-therapy research questions.
Prerequisite: OCC611

OCC635 **1 credit**
Clinical Skills B
Students learn clinical skills most typically used in various practice contexts of occupational therapy. Course includes development of competencies in safe clinical practices for mobility devices, monitoring and documenting vital signs, adherence to cardiac precautions, adapted self-care activities, joint protection and energy conservation. Skills are practiced in hands-on laboratory environments and then applied through Level I Fieldwork.
Prerequisite: OCC611

OCC645 **1 credit**
Clinical Skills C
Students learn clinical skills most typically used in various practice contexts of occupational therapy. Course includes development of competencies in safe clinical practices for physical agent modalities (PAM), fabrication and application of splinting devices, and wound care. Skills are practiced in hands-on laboratory environments and then applied through Level I Fieldwork.
Prerequisite: OCC611, OCC613, OCC623

OCC735 **1 credit**
Level I Fieldwork A
The overall purpose of the fieldwork experience is to provide students with exposure to clinical practice through observation and active participation in the evaluation and treatment process. The opportunity to work with clients and therapists helps students to examine their reactions to clients, themselves and other personnel while integrating academic learning with clinical practice. The focus of the learning experience will be the application of knowledge and skills

learned through coursework to include observation, written and verbal communication, professional behavior, individual and group participation with patients and clients, and beginning level assessment and intervention. At the completion of Level I Fieldwork experiences the student will demonstrate beginning-level competency on a series of clinical skills.
Prerequisite: OCC621, OCC625, OCC635

OCC736 **4 credits**
Assessment and Intervention: Adults
Occupational therapy assessment process and intervention approaches as they apply to individuals whose lives have been affected by disease, trauma and/or disability. In-depth analysis of the physical, social, cognitive and psychological properties of intervention strategies. Hands-on techniques, documentation strategies, patient/client and caregiver teaching and theoretical constructs are explored. This course focuses on assessment and intervention strategies that primarily address musculoskeletal or neurological impairments and medical conditions. Students will learn the historical and theoretical basis for a variety of assessment tools and intervention strategies.
Prerequisites: OCC613, OCC621, OCC623, OCC624

OCC741 **3 credits**
Interpersonal Relations and Dynamics of Collaboration
Interpersonal communication and relationship theories and information related to the dynamics of collaborating with others including OTA, members of the multidisciplinary team, patients and their families are explored. Strategies for using the self as a therapeutic agent, and teaching and empowering patients, families and caregivers, are discussed.
Prerequisite: OCC611

OCC745 **1 credit**
Level I Fieldwork B
The overall purpose of the fieldwork experience is to provide students with exposure to clinical practice through observation and active participation in the evaluation and treatment process. The opportunity to work with clients and therapists helps students to examine their reactions to clients, themselves and other personnel while integrating academic learning with clinical practice. The focus of the learning experience will be the application of knowledge and skills learned through coursework to include observation, written and verbal communication, professional behavior, individual and group participation with patients and clients, and beginning level assessment and intervention. At the completion of Level I Fieldwork experiences the student will demonstrate beginning-level competency on a series of clinical skills.
Prerequisite: OCC621, OCC625, OCC635

OCC746 (Formerly OCC743) **4 credits**
Psychosocial Interventions OT assessment and intervention approaches as they apply to individuals whose lives have been affected by developmental delay, disease, trauma and/or disability are explored. In-depth analysis of the social and psychological properties of intervention strategies. Focus on assessment and intervention strategies that mainly address cognitive and psychiatric impairments. Hands-on techniques, consultative models, documentation strategies, patient/client and caregiver teaching and theoretical constructs are explored.
Prerequisites: OCC621

OCC751 **3 credits**
Professional Issues and Trends
In-depth examination of issues affecting practice, reimbursement, role delineation, professional autonomy and the changing human services system in the United States. OT-specific issues regarding ethics, staff development, program evaluation, research, patient advocacy and health policy will be addressed. Strategic and program planning, program design and implementation, legislative imperatives, resource utilization and use of outcomes data for program planning and justification are presented.
Prerequisites: two of the following: OCC736, OCC746, OCC756

OCC754 **3 credits**
Environmental Dimensions of Occupation
In-depth exploration of the physical, perceptual, psychological and social dimensions of the environment. Impact of the environment on behavior and the individual's ability to mount an adaptive response will be examined. Students will complete an environmental assessment and will learn to design and construct environmental adaptations. Historical and theoretical basis for physical and social adaptations is explored.
Prerequisites: OCC621, OCC624

OCC755 **1 credit**
Level I Fieldwork C
The overall purpose of the fieldwork experience is to provide students with exposure to clinical practice through observation and active participation in the evaluation and treatment process. The opportunity to work with clients and therapists helps students to examine their reactions to clients, themselves and other personnel while integrating academic learning with clinical practice. The focus of the learning experience will be the application of knowledge and skills learned through coursework to include observation, written and verbal communication, professional behavior, individual and group participation with patients and clients, and beginning level assessment and intervention. At the completion of Level I Fieldwork experiences the student will demonstrate beginning-level competency on a series of clinical skills.
Prerequisite: OCC621, OCC625, OCC635

OCC756 (Formerly OCC753) **4 credits**
Assessment and Intervention: Children & Youth
Students explore occupational therapy assessment and intervention approaches as they apply to children and youth whose lives have been affected by complex developmental, physical, cognitive and neurological disorders. Students will conduct an in-depth analysis of the physical, social, and psychosocial contexts in which intervention strategies occur. Hands-on techniques, consultative models, reimbursement and practice domain challenges/opportunities, documentation strategies, client and caregiver education,

family-centered care and theoretical constructs are explored. Adaptive equipment, assistive devices, and emerging technology are examined. Learning activities help students to develop a repertoire of strategies to observe and assess children and youth, develop collaborative team skills, design intervention plans, refine their activity analysis skills, and identify the theoretical relevance for assessment tools, assistive devices and intervention strategies.
Prerequisites: OCC613, OCC621, OCC623, OCC624

OCC757 **3 credits**
Innovative Practice in Occupational Therapy
This course offers an in-depth exploration of emerging areas for occupational therapy practice. Issues regarding program development, financial and human resource management, outcomes measurement, advocacy, and health policy will be addressed. Students will work in small groups to examine the interrelationships of person, environment and occupation within communities and populations. They will collaborate with stakeholders including local agency staff and consumers to identify and develop potential client-centered and evidence-based programs and funding mechanisms. Self-directed classroom and distance learning activities will enable students to explore strategies for improving access to occupational therapy services and expanding the realm of practice.
Prerequisites: OCC736, OCC746, OCC756

OCC760 **1 credit**
Practice Platform Seminar
This course supports students in their final culminating project of the academic program, presentation of the Master's Portfolio. During this capstone course, students describe the development of their own critical thinking, assess current practice knowledge and skills, and identify constructs for their future professional practice. Through classroom and online learning activities that involve self-reflection on collected experiences over the program, students are guided in their professional socialization.
Prerequisites: OCC626, OCC736, OCC746, OCC756

OCC763 **2 credits**
Clinical Mastery
This course provides an overview of the clinical reasoning process that guides occupational therapy evaluation, goal setting, treatment planning and documentation strategies as related to clinical skills and current technologies. The practical, philosophical and theoretical bases for intervention are reviewed for the following advanced practice techniques: computer-assisted technology, environmental controls, specialized communication devices, seating and positioning, and dysphagia treatment. The need for advanced certification as well as parameters for referral to and/or collaboration with other disciplines will be explored.
Prerequisites: OCC736, OCC746, OCC756

OCC764 **2 credits**
Specialty Practice: Upper Extremity Rehabilitation
Students learn the clinical reasoning process that guides occupational therapy upper extremity rehabilitation with a focus on assessment, goal setting, treatment planning and documentation strategies. The practical, philosophical and theoretical bases for intervention are reviewed for the following advanced practice techniques: physical agent modalities (PAMs), kinesiotaping, joint mobilization, static and dynamic splinting, post-surgical techniques, and upper quadrant interventions. The need for advanced certification as well as parameters for referral to and/or collaboration with other disciplines will be explored.
Prerequisites: OCC736, OCC746, OCC756

OCC765 **1 credit**
Level I Fieldwork D
The overall purpose of the fieldwork experience is to provide students with exposure to clinical practice through observation and active participation in the evaluation and treatment process. The opportunity to work with clients and therapists helps students to examine their reactions to clients; themselves and other personnel while integrating academic learning with clinical practice. The focus of the learning experience will be the application of knowledge and skills learned through coursework to include observation, written and verbal communication, professional behavior, individual and group participation with patients and clients, and beginning level assessment and intervention. At the completion of all Level I Fieldwork experiences, the student will demonstrate beginning-level competency on a series of clinical skills.
Prerequisites: OCC621, OCC625, OCC635

OCC766 **2 credits**
Older Adults: Enabling Participation
This course provides an in-depth analysis of the impact of aging on health, well-being, and participation in older adults. Topics include the impact of normal aging, changing health status, role transition, memory and life review, retirement/ leisure pursuits, wellness, and end of life issues. Hands-on techniques, consultative models, reimbursement and practice domain challenges/ opportunities, documentation strategies, patient/client and caregiver education, and theoretical constructs are explored. Students will employ clinical reasoning in assessment and interventions across practice settings including acute, rehabilitation, outpatient, mental health, home, and long term care facilities.
Prerequisites: OCC611, OCC621, OCC623, OCC624

OCC771 **3 credits**
Level II Fieldwork A
(Credit/No Credit)
The fieldwork component of the curriculum provides students with an in-depth experience in the practice and application of the occupational therapy process. Students will apply the knowledge, skills and clinical reasoning gained through classroom, experiential and self-directed learning experiences to achieve entry-level practice competence. Students complete two full time, 12-week fieldwork placements following successful completion of assessment and intervention coursework. Successful completion of the fieldwork education component is a requirement for graduation

from the Occupational Therapy Program.
Prerequisites: Complete a minimum of 52 OCC credits

OCC775 (Formerly OCC773) 1.5 credits
Clinical Reasoning
Integrated with the Level II Fieldwork experience, this course provides the foundation for the analysis of constructs that inform daily practice decisions. Students are challenged to transfer their fieldwork experiences, academic knowledge, and clinical skills to the dynamic and challenging practice environment through the process of clinical reasoning. Clinical reasoning concepts in relation to the therapeutic use of self and occupations will be defined and discussed through client stories and opportunities to observe and question expert practitioners. Students will use the literature to validate practice decisions and/or reframe client problems and therapy interventions. Emphasis will be placed on establishing routine clinical reasoning skills through the "electronic classroom", fieldwork experience, and on-line group discussions.
Corequisite: OCC771

OCC781 3 credits
Level II Fieldwork B
(Credit/No Credit)
The fieldwork component of the curriculum provides students with an in-depth experience in the practice and application of the occupational therapy process. Students will apply the knowledge, skills and clinical reasoning gained through classroom, experiential and self-directed learning experiences to achieve entry-level practice competence. Students complete two full time, 12-week fieldwork placements following successful completion of assessment and intervention coursework. Successful completion of the fieldwork education component is a requirement for graduation from the Occupational Therapy Program.
Prerequisites: Complete a minimum of 52 OCC credits

OCC785 (Formerly OCC773) 1.5 credits
Clinical Reasoning II
This course is conducted completely on-line using distance teaching methods. Content includes the analysis of critical thinking constructs that inform daily practice decisions. Students will continue to develop and utilize clinical reasoning concepts to reflect on practice decisions implemented during Level II Fieldwork. Students will use literature and evidence-based studies to validate and/or reframe client problems and therapy intervention. Emphasis will be placed on articulating the clinical reasoning process with other healthcare professionals in designated work environments.
Corequisite: OCC781

OCC797 1-3 credits
Special Topics
Prerequisites: OCC611 or permission of instructor

PASF507 (A-2 crds) (B-3crds) GR 5 credits
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.

PASF513 GR 3 credits
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.

PASF511 GR 3 credits
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.

PASF 517 GR 5 credits
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.

PASF510 GR 2 credits
Medical and Professional Ethics
Understanding the philosophical principles related to biomedical ethics, patient-practitioner relationships, health policy 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.

PASF521 GR 2 credits
Medical Genetics, Immunology 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.

PAS611 8 credits
Clinical Medicine
This lecture course uses an organ-system organization to present an overview of the pathophysiology, clinical manifestations, diagnostic evaluation and management of common diseases encountered in primary care. The course includes modules in: epidemiology, infectious disease, cardiology, pulmonology, gastroenterology, hematology/oncology, endocrinology, nephrology, urology, rheumatology, neurology, dermatology, ophthalmology, otorhinolaryngology (ENT) and psychiatry. Principles of health promotion and disease prevention are also presented.
Prerequisites: PASF507GR, PASF513 GR, PASF517.
Corequisite: PAS612

PAS612 **2 credits**
Clinical Reasoning
This seminar course uses clinical case studies and role-playing to guide students in developing directed history and physical examination, clinical reasoning, case presentation and patient counseling skills. Research methods and reviewing the medical literature are also presented.
Corequisite: PAS611

PAS613 **4 credits**
Pharmacology and Pharmacotherapeutics
This lecture and case study seminar course is designed to introduce students to the principles of pharmacology, including the absorption, bioavailability, distribution, metabolism, excretion, classification and mechanism of action of commonly prescribed medications. Additionally, this course will give students an understanding of how drugs are used in clinical practice, including the clinical indications, contraindications, dosing, side effects and monitoring of commonly used medications.
Prerequisites: PASF507 GR, PASF513 GR, PASF521 GR

PAS614 **3 credits**
Emergency Medicine
This lecture and laboratory course encompasses emergent presentations and management of common primary care and emergency-care problems. Laboratory sessions cover procedures necessary for the delivery of emergency medical care. This course also includes limited emergency room patient exposure with written assignments.
Prerequisites: PASF507GR, PASF513 GR, PASF517

PAS615 **2 credits**
Laboratory Medicine
In this lecture and laboratory course, the utilization and interpretation of commonly used diagnostic and clinical laboratory studies such as X-rays, electrocardiograms and blood studies are reviewed.
Prerequisites: PASF507 GR, PASF513 GR, PASF521 GR

PAS621 **6 credits**
Clinical Disciplines Overview
During this lecture and workshop course, the physician-assistant student is introduced to the basic principles of diagnosis and treatment in the medical disciplines of pediatrics, surgery, obstetrics and gynecology. The female and male reproductive system examination workshop is also a component of this course.
Prerequisites: PASF507GR, PASF513 GR, PASF517, PASF521 GR, PAS613, PAS615

PAS622 **1 credit**
Pharmacotherapeutics Seminar
This course will use small-group, case-study, problem-based seminars to demonstrate the practical utilization of medications in the clinical setting. Prescription writing, dosing, titration and ongoing monitoring will be the focus of the course.
Prerequisite: PAS613

PAS623 **1 credit**
Advanced Radiology/ECG Seminar
(Credit/No Credit)
This seminar course builds upon the foundation of knowledge in chest X-ray, abdominal X-ray, bone X-ray and ECG interpretation developed in the PAS614 and PAS615 courses. CAT scans of the head are also reviewed. Students will recognize common disease patterns as seen on these studies.
Prerequisites: PAS614, PAS615

PAS624 **3 credits**
Biomedical Literature and Research
Basic statistics, research methods, epidemiology, the structure of writing used in medical research and the principles of evidence-based medicine are reviewed in this course. Students will have the opportunity to review current medical research and evaluate it with regard to its application to medical practice.
Prerequisites: PAS612

Clinical Rotations **36 credits**
6 Rotations (6 credits/rotation)
The physician assistant student will complete six (5- to 6-week) rotations.
Prerequisites: Students must successfully complete ALL didactic or classroom courses in the physician assistant program (except PAS771) and be in good academic standing prior to proceeding to any Clinical Rotations or Preceptorships

PAS741 **6 credits**
Internal Medicine Clinical Rotation

PAS742 **6 credits**
Pediatrics Clinical Rotation

PAS743 **6 credits**
Women's Health Clinical Rotation

PAS744 **6 credits**
Psychiatry/Mental Health Clinical Rotation

PAS745 **6 credits**
Surgery Clinical Rotation

PAS746 **6 credits**
Emergency Medicine Clinical Rotation

Preceptorships **24 credits**
Preceptorships (6 credits/preceptorship)
Two five- to six-week preceptorships must be done in an ambulatory primary-care setting. The remaining preceptorship experiences include the Floating Medicine Block in which students do six additional weeks in a medically related specialty such as family, internal or geriatric medicine, and the clinical elective. During the elective students can spend more time in one of their rotation specialties, or gain experience in other settings such as neonatology, HIV, correctional medicine, urology, orthopedic surgery, cardiothoracic surgery and others.

PAS759 **6 credits**
Preceptorship IA: Primary Care 1

PAS760 **6 credits**
Preceptorship IB: Primary Care 2

PAS763 **6 credits**
Preceptorship IIA: Floating Medicine Block

PAS764 **6 credits**
Preceptorship IIB: Elective

PAS771 **3 credits**
PA Master's Project and Summary

Competency Evaluation **(Credit/No Credit)**
This course, which takes place throughout the entire clinical year, is the capstone experience of the PA program. It consists of two components: an independent project that includes either an applied-research project, extensive literature research with the preparation of a review article for submission to a professional journal, a PA education/instruction experience, or a community health-education project. It will be developed with, and supervised by, a faculty advisor and include an extensive literature review, integration of knowledge acquired throughout the curriculum, a written assignment and an oral presentation. The course also includes a multi-faceted summative evaluation/assessment procedure consisting of: a comprehensive written examination that encompasses topics drawn from the entire PA Program curriculum; and a series of Objective Structured Clinical Examinations (OSCE) using standardized patients where students must demonstrate: eliciting a medical history, performing a physical examination, ordering appropriate ancillary studies, formulating a diagnosis, developing a management plan, rendering patient education and documenting the findings, all as appropriate to the clinical cases presented. Students must successfully pass the independent project and the multi-faceted evaluation procedure in order to complete the requirements for this course and the master's degree.
Prerequisite: All PA professional phase didactic courses

SDN 601 **3 credits**
Sustainable Design Methodologies
Sustainability is a cultural phenomenon that is reshaping the way architects, engineers, designers and planners conceive of the built environment. This lecture/seminar course will explore changes in culture over the years that have led to the formation and adoption of contemporary sustainable design practices, technologies and processes. Current aspects of sustainability will be explored including the impact of the LEED rating system, legislation, environmental law, corporate culture evolution, integrated design process, energy modeling and economic impacts of land development. Students will complete a final paper on future directions in sustainable design at the end of the course.

SDN 602 **3 credits**
Adaptive Design
An introduction to quantitative criteria that define adaptive responses as instrumental characteristics of design based on human comfort, program, climate and site. Investigations will seek an understanding of the reciprocity between competing (and often contradictory) design forces, such as theoretical versus real, dynamic versus static, spatial and numerical, energy gain and loss. An awareness of the function of scientific instruments for measurements and performance assessments on buildings and outdoor spaces on real sites with the goal of achieving human comfort will be explored. Students will propose design interventions in accordance with their experimental data and use simulation tools to assess ultimate performance of the intervention.

SDN 603 **3 credits**
Sustainable Systems
This course will provide a thorough understanding of ecological site systems and sustainable building systems in order to optimize energy efficiency and minimize environmental pollution while maintaining human comfort resulting in a holistically designed building that is non-polluting and energy efficient. Students will complete a series of case studies and a final project.

SDN 604 **3 credits**
Green Materials
A key requirement to completing a successful sustainable design project is a careful consideration of the environmental and energy performance impacts of construction materials. Students will begin the course by learning how to complete a life cycle analysis for materials as preparation for the design and creation of their own material/construction system. During the project, students will continue to discuss the pros and cons of different materials/construction systems in the context of trying to better understand the tenants of sustainable design. Students will complete a final "construction" as part of the requirements for the course.

SDN 606 **3 credits**
Development of Sustainable Buildings
This lecture course will educate students on all aspects of sustainable development ranging from construction startup to project financing to management of green construction. Students will learn techniques of cost benefit analysis including such aspects as impact of zoning and code ordinance for green projects to understanding tax incentives for such projects. Students will complete case studies and finish the semester with a completed proposal for a sustainable project.

SDN 611 **6 credits**
Sustainable Design Studio I
This studio will emphasize interdisciplinary teaching and learning as a fundamental core concept of sustainable design. Students will be challenged to work collaboratively on a series of design projects that foster creativity, ingenuity and innovation as key components of effective sustainable design.
Prerequisites: SDN 601

SDN 615 **3 credits**
The Sustainable Organization Primer
This lecture/seminar course will provide a thorough understanding of the different components necessary to build and maintain a 21st century sustainable company. This course will explore the role of diversity, impact of environment, green supply chain management, and branding/rebranding strategies as core components of companies seeking to reach the triple bottom line: Environment, Equity and Enterprise.
Prerequisites: SDN601

SDN 702 **3 credits**
Energy and Carbon Modeling
Intelligent sustainable design considers the impact of buildings and business processes on global energy fuel types, consumption and carbon flows. The purpose of this course is to understand building energy modeling and enterprise carbon reporting. Students will create a schematic-level energy model and generate a carbon report using commercially available software and industry standard protocols. Student teams will explain, calculate and analyze design exercises, individual and group case studies and a final design project.
Prerequisite: SDN 601

SDN 703 **3 credits**
Building Simulation II
This advanced elective course will build upon the first Building Simulation course to explore more complex and technically demanding simulation software packages including DOE2. Students will complete a series of short exercises designed to develop specific modeling skills. The students will go on to develop sophisticated energy and daylight models for a proposed building and generate a comprehensive report on the results of the simulations. This course is geared towards engineers.
Prerequisite: SDN 702

SDN 704 **3 credits**
Tensile Structures
As architects continue to seek innovative ways to create outdoor microclimates and indoor modification of light and air, tensile structures provide a unique and effective opportunity to achieve these goals. This course will begin by introducing students to the history of tensile structures and move on to contemporary applications of this technology. Students will go on to design and build small scale tensile structures to solve specific micro-climate responses. These constructions may be used in conjunction with the Green Design Build course.

SDN 710 **3 credits**
Green Design Build
This elective course focuses on actual design and implementation of sustainable materials and technologies on a small scale construction project. Students may plug into a real project under construction or design and create their own structures for a particular site or client. Experts from around the region will be brought in as guests to assist with the process.
Prerequisite: SDN 601

SDN 791 **0-3 credits**
Sustainability Internship
This course allows students to pursue direct experience in a company or organization that is actively engaged in sustainability work. Students augment and enrich their overall education at the University by learning lessons of sustainability through direct work experience on sustainable projects. Permission required, see program director or Career Services office for details.
Prerequisite: SDN-601

SDN 791 **3 credits**
Practicum in Sustainable Design, Engineering or Construction
Students are required to complete a minimum of 8 weeks of real world experience on a project as overseen by an approved mentor on the project. In addition, students must prepare two research papers on the impact of sustainable design upon mainstream design and construction practices. Lastly, students will complete a portfolio that details their experiences and quantify the knowledge, skills and design synthesis experience gained in the practicum.

SDN 900 **3 credits**
Thesis in Sustainable Design I
This seminar is the first of a two-term sequence of courses focused on independent research, inquiry design exploration and synthesis. Weekly seminars, interactions with faculty members help to inform student research and lead to the development of a comprehensive thesis project. This course will include class based guidance on the conceptualization, analysis and execution of an individually based thesis defined by methods of inquiry necessary to the interdisciplinary nature of sustainability. Emphasis will be placed on the reciprocal relationship between the research and design processes. Advanced building simulation tools and other quantitative measurements will be integral part of those processes.
Prerequisites: SDN 611

SDN 901 **6 credits**
Thesis in Sustainable Design II
This third and final studio in the sequence will focus on the continuation and completion of the project begun in the previous semester. Students will be required to focus on specific details and features of their project. If agreed to by the program director, students will present their final project in a public forum and generate a final “book” (using the most current Philadelphia University Guide For The Preparation Of Doctoral Dissertation And Master’s Theses document) that includes all of the work completed during the studio sequence. For a building design project, students will be required to present their building simulation results as part of the final requirements for graduation.
Prerequisites: SDN 900

TAX660 **3 credits**
Individual Taxation
This course is a study of federal tax law as it pertains to individuals. It emphasizes the determination of gross income, deductions and credits, tax accounting and timing principles, realization and recognition of gains and losses, and standards of tax practice and ethical concerns. Students gain an awareness of history and tax policy considerations behind various Internal Revenue Code provisions.

TAX662 **3 credits**
Corporation Taxation
This course will provide students with knowledge concerning organization, capital structure, gross income and deductions, dividends, accumulated earnings tax, personal holding tax and stock redemptions.

TAX664 **3 credits**
Tax Research
This course enhances the student's ability to identify tax issues, locate and evaluate the legal authority relevant to those issues and effectively communicate, both orally and in written form, the conclusions and recommendations from their research. Electronic (computer) research will be taught in a hands-on setting. Students will gain an awareness of issues in federal tax practice and procedure, including ethical concerns for tax professionals.
Prerequisites: TAX660, TAX662

TAX763 **3 credits**
Financial Planning
This course will cover all aspects of financial planning including income tax planning, estate tax planning and strategies, gift tax, insurance planning, investment strategies, planning for the elderly and planning for survivors.

TAX765 **3 credits**
Taxation of Flow-Through Entities
This course provides an in-depth study of flow-through entities including S corporations, partnerships and limited liability companies. Emphasis will be focused on student's understanding of the tax statutes, court cases and practice techniques related to the concept of "choice of entity." This course creates an awareness of the potential consequences of choosing a particular form of entity. Topics covered include formation, operation, and dissolution of S corporations, partnerships and limited liability companies.

TAX770 **3 credits**
Business Tax Planning
This course explains the various types of entities, types of compensation, fringe benefits and liquidation of each type of entity such as proprietorships, partnerships, corporations and 1120S corporations.

TAX771 **3 credits**
Advanced Individual Taxation
This course is a continuation of TAX660 - Individual Taxation and is intended as a comprehensive continuation of advanced topics for individuals. In addition to federal taxes, Pennsylvania, New Jersey and Delaware state tax regulations will be covered.
Prerequisite: TAX660

TAX778 **3 credits**
Current Issues in Taxation and Accounting
This course will update students in various tax and accounting topics. Topics will include new development at the IRS and in areas such as individual taxation, business taxation, financial planning, business tax planning, multi-state tax issues, estate taxation and accounting and auditing pronouncements.

TAX782 **3 credits**
Tax Accounting
This course will review accounting methods and periods, installment method, long-term contracts and changes in accounting methods.

TAX789 **3 credits**
Taxation of Real Estate Transactions
This course emphasizes the income tax aspects of acquiring, operating and disposing of investment and personal real estate. Detailed consideration of deductions, conventional and creative financing techniques, foreclosures and repossessions, subdivision, sales/leaseback transactions, tax-deferred exchanges, involuntary conversions, and sale of principal residence.

TAX791 **3 credits**
Internship
Internships provide students with an opportunity to apply and further develop the knowledge they have gained in the classroom. Under faculty supervision, students work in salaried positions related to their career goals. While on their assignments, students develop meaningful learning objectives, attend an internship seminar, complete challenging assignments, and write bi-weekly reports analyzing articles in academic journals and practitioner publications.
Prerequisites: Minimum of 18 graduate credits completed (excluding foundation courses); available to full-time students only and subject to availability and eligibility; permission required, see Program Director or Career Services Office for more information.

TAX793 **3 credits**
State and Local Taxation —Individual and Corporations
Emphasis will be placed on individual and corporate tax problem areas in the states of Pennsylvania, New Jersey and Delaware. Gross receipts and sales tax will also be covered.

TAX794 **3 credits**
IRS Tax Procedures
A complete review of audit, collection and appeal procedures conducted by the Internal Revenue Service will be examined by the students.

TAX795 **3 credits**
Estate and Gift Taxation
This course will review mainly the estate and gift tax returns, such as preparation and problem areas. Deductions, income, annuities and taxable transfers will be discussed.

TAX797 **1-3 credits**
Selected Topics
Content will vary in response to current issues.

TAX798 **3 credits**
Independent Study
This course provides students with an opportunity to pursue areas of interest while working jointly with a faculty member. Subject to availability and approval required, see appropriate form online on the University Registrar's web page http://www.philau.edu/registrar/ for more information.

TES901 **3 credits**
Preliminary Examination Preparation
This course is intended for Ph.D. students who have completed their coursework, but who have not yet passed both parts of the qualifying examination. Students will meet with their advisor on an independent basis and will be given guidance and practice examinations to prepare for the doctoral-qualifying examination.

TES902 **6 credits**
Thesis I
Doctoral students will form the doctoral committee and complete formulation of the thesis topic. Literature review and research of the proposed topic. Oral presentation and written submission of thesis proposal will be made to the student's doctoral committee.

TES903 **9 credits**
Dissertation Research I
This course is intended only for those students who have achieved Ph.D.-candidacy status. Seminal and original research will be conducted with a goal of preparing and defending a doctoral dissertation.
Prerequisite: Admission to doctoral candidacy

TES904 **3 credits**
Dissertation Research II
This course is intended only for those students who have achieved Ph.D.-candidacy status. Seminal and original research will be conducted with a goal of preparing and defending a doctoral dissertation.
Prerequisite: TES903

TES906 **6 credits**
Thesis II
Completion and oral presentation of thesis work to the graduate faculty of Philadelphia University. Submission of the written thesis using the most current Philadelphia University Guide For The Preparation Of Doctoral Dissertation And Master's Theses document.
Prerequisites: TES904

TXD615 **3 credits**
Design Studio IA
Focuses on design research as an essential beginning for textile design studio work. Students in all concentrations will work on common projects and, toward the end of the semester, take their research work into design work specific to their concentration.

TXD616/TXD617 **6 credits**
Design Studio IB & IC
This initial course will be delivered through lecture/studio sessions and will ensure that the student gains increasingly advanced knowledge of the technical/design aspects of knit, print or weave design. Within TXD616 and TXD617, projects will be devised to integrate the knowledge and practice gained through design and technical courses, with the development of individual creative design work in the chosen concentration (knit, weave or print).

TXD625 **0 credits**
Seminar
(Credit/No Credit)
Weekly seminars will be arranged during the first semester, to which visiting speakers will be invited to give presentations on topics covering the national and international perspectives of marketing, technology and design in textile and related activities. Student participation will be expected during these seminars.

TXD665 **3 credits**
Design Management
The aim of this course is to create an awareness of the factors involved in the process of innovation and design, and the importance of establishing a policy and strategy, which will ensure that the design process is effectively promoted and managed to assist in the achievement of organizational goals. At the end of the course, students will be able to: (a) relate the process of design to corporate and product strategy; (b) describe the nature of the tasks undertaken by industrial innovators and designers; (c) prepare a brief for a design project; and (d) monitor and evaluate the progress of a design project. They will also become aware of (a) the contribution made to the design process by systematic techniques such as value analysis and by specialist support staff; (b) the factors affecting creativity and innovation; (c) the link between product and manufacturing system design; and (d) the legal protections offered to designers.

TXD742/TXD743/TXD744 **9 credits**
Design Studio II
Studio work involving advanced-level technical/creative projects in the chosen design concentration (as in Design Studio I), and the opportunity for interdisciplinary work encouraging knit/print, weave/print or weave/knit coordination, will be carried out in the first part of the semester. Student design work at this point should progress from assigned projects to independent, student-directed work. Toward the end of the semester, reviews of student work will lead to the selection of a "major project." The aims and outcomes of this project will be written up in detail for submission to a faculty review committee. This project will form the basis of the final semester's design work, thesis report and student exhibit for graduation.

TXD749 **3 credits**
Weave Technology II
The variations, functions, auxiliary devices and design characteristics of dobby and Jacquard looms and the equipment

used to support the weaving process will be studied. Calculations relating to production and materials will be considered, along with the accurate analysis of fabrics for weight and cover. Consideration will be given to size, texture, fiber type, weave and other fabric parameters. Advanced multilayered weaves will also be studied.

TXD750 **3 credits**
Knitting Technology
A further investigation into the construction, design and production of both weft- and warp-knitted fabrics. Lectures will be complemented with lab work involving the design, production and analysis of knit fabric upon power-knitting equipment.

TXD756 **3 credits**
Advanced Jacquard
The design and production of Jacquard fabrics will be studied. Students analyze designs and produce complex fabrics on commercial equipment using computerized design and production systems.

TXD772/TXD773/TXD774 **8 credits**
Design Studio - III
(a) Project
The major project worked on independently by students during this final semester will be chosen to show the student's range of creative and technical ability. It will be concerned with a specialized area within their design concentration. Each project will be required to encompass:
(1) Design ideas and extensive sketchbook development
(2) Market research and technical notebooks
(3) Print Croquis and/or fabrics in sample form, product rendered designs
(b) Final Exhibit
The student will be expected to mount a personal design exhibit showing the range of his/her abilities in either knit, weave or print design. The work will be professionally presented and displayed for judging by a panel of design faculty. An important outcome of this exhibit will be the opportunity for key industrial people to visit, and for possible career opportunities to result. A secondary outcome will be its inspirational impact on undergraduate design students within the University.

TXD776 **3 credits**
Textile Printing Technology
A specialized and practical course in the principles, techniques and chemical processes involved in the printing of textiles. The chemistry and use of different dye classes and pigment systems; application printing; discharge, burnout and other styles; and the influence of thickeners, cloth preparation and fixation processes on quality and colorfastness are examined.

TXD777 **3 credits**
Advanced Computer-Aided Textile Design
This course focuses on both the conceptual and technical aspects of digital portfolio presentation for the textile designer. Students will use interactive media to create both a CD-ROM portfolio and a personal website. Course projects provide an in-depth exploration of Adobe Photoshop, Adobe Illustrator and multimedia design software. Students must have a clear understanding of Adobe Photoshop and Adobe Illustrator before enrolling in this course.

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TXD780 **3 credits**
Advanced Drawing: Materials & Techniques
This course 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 or VSDRW-101 (or equivalent) or permission from instructor

TXD797 **3 credits**
Selected Topics: Advanced Drawing Techniques
Advanced Drawing 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, materials and the relationship of traditional drawing tools with digital drawing techniques. Students will participate in off-campus trips to both Philadelphia and New York galleries and museums.
Prerequisites: T712, graduate status or undergraduate status with 90 credits and 3.00 GPA

TXD798 **3 credits**
Independent Study
Students may select an independent project or research topic. Approval is required, see appropriate form online on the University Registrar's web page http://www.philau.edu/registrar/ for more information.

TXD975 **1 credit**
Thesis
(Credit/no credit)
The design work encompassed through the major project needs to be submitted in thesis form, three copies of which are to remain at the University. The thesis should contain written material relative to the design inspiration, technical development and production process, and yet students

are encouraged to include visual imagery relevant to their work and design development as evidence of their design capabilities. This course will assist final-semester students working toward the production of their thesis document using the most current Philadelphia University Guide For The Preparation Of Doctoral Dissertation And Master's Theses document. In addition to the bound thesis, other media presentations of their final project will be explored.
Prerequisite: TXD744

TXD993 **3 credits**
European Textile Print Study Tour
A two-week study tour in the textile printing areas of France, Switzerland and Northern Italy introduces textile 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: Approval of the program director

TXD994 **3 credits**
European Knitting Study Tour
A guided visit to the textile machinery producers and textile industry in Europe (Germany and Switzerland). During the 10 to 14-day stay, students will have the opportunity to see some of the leading knitting machine manufacturers, tour the production plants, attend demonstrations, use design equipment and participate in presentations regarding the projected targets of this industry.
Prerequisites: TXF502, TXE712 and TXE752 or equivalents

TXE601 **3 credits**
Fiber and Yarn Studies
This course advances the knowledge of fibers and yarns. In the case of cotton and wool, a detailed study of how fibers are produced is made and how the properties and structure of fibers vary in relation to variability in growing conditions is explored. For man-made fibers, the length and fineness can be changed during manufacture depending on the type of system on which the yarn is to be produced. Yarn-processing systems are covered in detail along with faults that can result from various causes, in either the fiber or the machines. Quality-control procedures are emphasized at each stage of processing, along with methods for analyzing test results. Typical products are discussed from the point of view of type of fiber used and type of yarn structure.

TXE613 **3 credits**
Characterization of Fibrous Materials
Topics will include chemical nature and structure; mechanical, electrical, and thermal properties; viscoelastic properties, use of instrumentation with computer-controlled data acquisition; IR, RAMAN, and molecular spectroscopies; SEM; and creep/stress relaxation. The physical and mechanical testing of fibers, yarns and fabrics are studied, along with the static and dynamic-load response of textiles.

TXE621 **3 credits**
Mechanics of Materials
Definitions of stress and strain, uniform states of stress and strain, transformations, principal axes, stress/stress relations, strain/displacement relations. Equilibrium, boundary conditions, simplifying assumption, and yield criteria are presented.

TXE622 **3 credits**
Mechanics of Textiles
Hierarchical mechanical-dependency relationships in textiles are discussed. Included are the role of fiber and yarn twist, yarn crimp, finishes, and coatings to mechanical response of textiles. Dynamic and static response to various types of loading are investigated. Tearing, abrasion, and wear properties as a function of textile form are presented.

TXE624 **3 credits**
Advanced Textile Composites
The objectives of this course will be to expose the student to the textile materials and processes used in composite applications and to introduce methods of analyzing and predicting the behavior of the resultant products. Fiber architecture of textiles used for composites is reviewed along with manufacturing processes. Tools for predicting elastic properties will be introduced along with the relationship of elastic properties and geometric considerations.

TXE625 **3 credits**
Biomaterials Technology
General introduction to the uses of artificial materials in the human body for the purposes of healing, correcting deformities and restoring lost function are presented. Topics include biocompatibility, techniques to minimize corrosion, and specific uses of materials in various tissues and organs.

TXE713 **3 credits**
Coloration and Finishing Studies
Applications studied in detail will include methods of imparting dimensional stability to cotton fabrics through cross-linking; the problems associated with dyeing fiber blends; textile printing using pigments and various dyes. A study will also be made of binders, e.g., latex use in pigment printing and dyeing. Other methods of textile coloration, e.g., solution dyeing, garment dyeing and transfer printing will be considered. Instrumental color measurement will also be covered.

TXE721 **3 credits**
Analytical Methods
Statistical process-control theories and methods are discussed, and applications toward optimizing both process and product quality in modern textile operations are considered. The objective of these studies is to develop a process/product control system for the progressive textile plant of today. Another major segment of this course will be the review and employment of various methods of analysis of experimental data. Various techniques, and their advantages and disadvantages, will be considered and studied using textile applications.

TXE751 **3 credits**
Advanced Woven Structures - Product Development
Independent pursuit of goals in the development of woven fabrics is emphasized. The student will complete three projects, with product-development skills enhancement as a primary goal. Each project will require a search of current literature, the use of CAD, selection of equipment, production of a prototype fabric and submission of a technical report. Two of the projects will be selected by the course advisor and the third will be student-selected.

TXE752 **3 credits**
Advanced Knitted Structures - Product Development
This course is an in-depth study of weft- and warp-knitting technologies, fabric constructions, and apparel, home furnishing and industrial products/applications/markets. Weft-knit fabric technologies studied include single flat and tubular, double knit, fully fashioned, electronic, etc. Warp-knit fabric technologies studied include tricot and raschel, weft inserted, double needle bar, multiaxial, etc. Students are exposed to a variety of weft- and warp-knitting machines, stitch constructions and mechanical and electronic design/pattern mechanisms. Knit fabric geometry is analyzed on the machine, off the machine and after finishing. The relationship and interactions between the knitting yarn and knitting elements are well established. Knitting productivity and quality factors are emphasized.

TXE753 **3 credits**
Advanced Nonwoven Structures - Product Development
Nonwovens have a vast range of physical properties and end-use applications with an exceptionally high performance-to-price ratio. Such remarkable characteristics are possible due to the range of fiber type, bonding methods, and finishing methods possible at an exceptionally low cost. This course is intended to give a broad range of knowledge in nonwoven manufacturing methods cost and end-use applications and consumption. This will be accomplished by lecture, laboratory experiments, literature searches, research, cost analysis, statistical comparisons and modeling.

TXE754 **3 credits**
Industrial and Specialty Fabrics - Product Development
Industrial fabrics are used in a variety of applications other than consumer apparel and home furnishing products. For example, industrial fabrics are used in automotive trim, architectural fabric structure, awnings/outdoor furniture, aerostats, camping products, commercial/institutional interior trim and furnishings, composites, conveyor belts, filtration, geotextile and geomembrane applications, hazardous occupational products, marine products, military products, passive solar systems, sails, tarpaulins, tents, tires and window energy systems. This course is concerned with the study of major industrial-fabric applications and constructions. The performance requirements for each major industrial application will be related to the selection of specific fabric constructions. Trends in industrial fibers, yarn structures, fabric constructions, fabric finishing/coating/laminating and in fabrication of industrial products are reviewed for each major application. Each major application/market will be covered, wherein specific requirements and qualified fabric construction will be reviewed. The historical development of each application will be emphasized to demonstrate the impact of new materials/material forms/processing techniques on the dynamic nature of the industrial fabric business.

TXE755 **3 credits**
Advanced Yarn Studies
This course allows for an independent pursuit of advanced knowledge through a literature search in a selected area of research. Further, the course is structured toward an advanced study of the newer methods of yarn manufacture and the latest developments in processing, computerized control and testing methods. Relationships between yarn properties and product properties are investigated.

TXE759 **3 credits**
Product Evaluation
The processes for the evaluation of fabrics and products are examined. The use of product assessment as a tool for process and product improvement is emphasized. The complexity of the fiber, yarn, fabric and product-forming systems is such that it requires careful evaluation at each stage of the manufacturing process. A comprehensive understanding of the interrelationships of the fabric and product forming stages as related to their evaluation is developed. Established and innovative methods of evaluation are explored.

TXE762 **3 credits**
Textile and Apparel Operations Management
This course is intended to cover the usual operations management topics, but with direct emphasis on textile and apparel operations. It deals with such topics as global competitiveness, product layout, strategies of life-cycle management, capacity planning and forecasting, quality management, materials management, human resource management, facilities management, production planning, characteristics of textile equipment and managing technological change.

TXE783 **3 credits**
Advanced Chemistry of Fibrous Materials
The course is designed to introduce modern methods of instrumental analysis and related technologies to fibrous materials. This course is concerned with the study of spectroscopic methods such as: UV-Spectroscopy, FTIR, NMR, EPR, GC, HPLC, microscopy, DSC and some microbiological methods, etc., applied to material science and technology. In addition, this course will introduce students to related fields of fibrous materials and polymers such as gels and sprays, and the technology of production of delivery systems for drugs and medications. Introduction to adhesion processes and superabsorbents (e.g., diapers, incontinence products and biotextiles) will also be covered. Lectures are complemented with laboratory work and seminars.

TXE790 **3 credits**
Quality Management
Quality has emerged as a formal management function. No longer restricted to manufacturing and operations areas,

it now includes the design, purchasing and marketing processes. Through lecture, discussion and experiential activities, this course examines quality theory and practice — how a more sophisticated understanding of quality can lead to a strategic approach to utility management which is necessary to compete in today's world marketplace. Factors required for creating and maintaining a corporation's strategic and competitive edge are thoroughly analyzed.

TXE791 **3 credits**
Internship
Internships provide students with an opportunity to apply and further develop the knowledge they have gained in the classroom. Under faculty supervision, students work in salaried positions related to their career goals. While on their assignments, students develop meaningful learning objectives, attend an internship seminar, complete challenging assignments and write bi-weekly reports analyzing articles in academic journals and practitioner publications.
Prerequisites: Minimum of 18 graduate credits (excluding foundation courses); available to full-time students only and subject to availability and eligibility; permission required, see program director or Office of Career Services for details.

TXE797 **1-3 credits**
Selected Topics

TXE798 **3 credits**
Independent Study
Students may select an independent project or research topic. Approval required, see appropriate form online on the University Registrar's web page http://www.philau.edu/registrar/ for more information.

TXE941 **9 credits**
Research Thesis
In consultation with the thesis advisor, the student will select an area for concentrated study. The elements of the study will include, but not be limited to, literature searches, experimental design, research, thesis preparation (using the most current Philadelphia University Guide For The Preparation Of Doctoral Dissertation And Master's Theses document) and oral thesis presentation. This project is the culmination of a rigorous preparation in one or more areas of specialization and leads to the establishment of expertise in a chosen field. (20 hours minimum per week)

TXF501 **3 credits**
Foundation 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 for each. This information is then used in the proper selection of fibers and yarns for various fabrics and ultimately for various end-use textile products in apparel, household and industrial applications. This is a foundation course that does not count for credit toward the graduate degree.

TXF502 **3 credits**
Foundation Fabric Studies
Provides a comprehensive introduction to weaving and knitting technologies including terminology, process flow, fabric structures, products, markets and fabric properties. Fabric geometry is emphasized in order to establish the interdependence of fabric properties and behavior on fabric structure and construction. Assignments include a substantial laboratory experience in which fabric samples made in the lab are analyzed and mounted with descriptive parameters in a research notebook format. This is a foundation course that does not count for credit toward the graduate degree.

TXF-503 **3 credits**
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. This is a foundation course that does not count for credit towards the graduate degree.

TXF-506 **3 credits**
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 both formal, biophysical and psychological implications and goals. This is a foundation course that does not count for credit towards the graduate degree.

TXF-507 **3 credits**
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. This is a foundation course that does not count for credit towards the graduate degree.

TXF510 **3 credits**
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 2D image making and web-design programs. Course projects provide hands-on experience with Adobe Photoshop, Adobe Illustrator and web design software. This is a foundation course that does not count for credit towards the graduate degree.

TXF511 **4 credits**
Knit Technology I
The understanding of 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.

TXF512 **3 credits**
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.

TXF513 **3 credits**
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.

TXF514 **3 credits**
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.

TXF515 **3 credits**
Print Design 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 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.

TXF516 **4 credits**
Dyeing & Finishing
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.

TXF517 **4 credits**
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, piques, 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.

TXF518 **3 credits**
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 and dobby looms, students create warps and chains, and weave prototype cloth for various end uses.

TXF519 **3 credits**
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.