

USING THIS BULLETIN

Changes to the Undergraduate Bulletin

Changes to the Undergraduate Bulletin will be tracked in real-time and listed below. At the end of every semester, these updates are incorporated into the Bulletin.

Courses Added: Effective Summer 2026

- ABSM 104N: Art and Agriculture
- AE 448: Parametric Thinking and Modeling for Building Design
- AFR 345N: Africa in Global Politics
- ARTH 218N: Land and Us: Modern Art and the Environment
- ARTH 418: The Real Rebels: Postwar Avant-Garde Art of Asia
- ARTH 495M: Internship: Museum Studies Internship
- ASIA 150: Environment and Society in South Asia
- CAMS 160H: Sacrifice in the Ancient World
- CAMS 485: Greece, Rome, and Africa
- CE 404: Probabilistic Modeling and Machine Learning for Civil and Environmental Engineering
- CED 265: Facilitation & Participatory Engagement: Leading Groups & Building Consensus
- CED 318: Municipal Governments: Finance, Planning & Impact
- CED 428: Economic Decision-Making for Sustainability
- COMM 182: The Language of Video
- COMM 200N: Generative AI for All
- COMM 433: Film History for Filmmakers II: The Development of the Cinema from 1960 to the Present
- CRIMJ 461: Crime, Justice, and Society in England, 1750-1914
- DART 214: Storyboarding for Animation
- DART 312: Illustration for Comic and Sequential Arts
- DART 324: Sound Design for Digital Arts and New Media Production
- DART 325: Game Studio II
- DART 403: 3D Studio II
- DART 415: Immersive Media Studio
- ENGL 175N: Technological Imagination and Social Thought
- GER 435: Varieties and dialects of German
- GER 456: Migration and Multilingualism
- HM 446: Marketing of Regulated Beverages
- HORT 122: Wine grape production across the United States
- INTAF 497: Special Topics
- ITECH 212: Artificial Intelligence Tools and Methods
- ITECH 308: Applied IT Project Management
- ITECH 442: Applied Artificial Intelligence Project Lifecycle
- ITECH 457: Advanced Network and Cybersecurity Technologies
- ITECH 458: Information Technology Laws, Regulations, and Ethics
- ITECH 490: Special Topics in Information Technology: Technology Exploration and Application
- KINES 494B: Research Project Capstone
- KOR 12: Step-by-Step Korean 2
- LATAM 197: Special Topics
- LATAM 494: Research Project
- LATAM 496: Independent Studies
- LATAM 497: Special Topics

- MNG 310: Mine Design Software
- MUSIC 125: SOUND DESIGN FOR GAME AUDIO
- MUSIC 187: Rock Ensemble
- MUSIC 275: Music Composition Minor Lessons
- MUSIC 401: Scoring for Film and Media
- MUSIC 409: Popular Music Analysis
- MUSIC 454: Live Sound Engineer Training
- NUTR 495C: Advanced Field Experience in Nutrition Education and Counseling
- OLEAD 100H: Introduction to Leadership Honors
- OLEAD 494H: Research Project
- PLSC 205: Political Science Professions and Career Development
- PLSC 402: Political Violence in the United States
- RPTM 495E: Sport Management Internship
- SC 493: Health Equity Leadership Program
- SODA 110N: Social Data, Technology, and Artificial Intelligence

Courses Dropped: Effective Summer 2026

- DS 440W: Data Science Capstone
- ERM 449: Sustainable Water Management: Economics and Policy
- FSC 401: Introduction to Fuel Technology
- HIST 491: British Civil Wars and Revolutions, 1639-1651
- INART 236: Integrating Music and Animation with Technology
- INART 410: Early Pennsylvania Decorative Arts and Furniture
- INART 415: Nineteenth Century Pennsylvania Architecture and Restoration
- KOR 450: Korean Cultures in Global Contexts
- MNG 410H: Underground Coal Extraction
- MNGT 209: Mine Machinery Control Methods
- MNPR 401H: Mineral Process Engineering
- MUSIC 341B: Instructional Practices in General Music
- SPAN 412H: Translation
- THEA 474: Theatre Design History I
- THEA 475: Theatre Design History II

Course Changes: Effective Summer 2026

ACCTG 404: Managerial Accounting: Economic Perspective (3 Credits)

Old Listing Effective Through Spring 2026:

This course emphasizes the use of accounting information for internal purposes as opposed to the external disclosure focus of the financial accounting course. The cost covers the vocabulary and mechanics of cost accounting and the design of management accounting systems for planning and controlling operations, and for motivating personnel. The course integrates accounting with ideas from data analysis, decision analysis, finance, microeconomics, and operations management. The themes stressed throughout the course will be the notion that information is costly; the circumstances that necessitate cost allocation, the idea that different costs and different allocation schemes apply for different purposes; and fundamentals of incentive and compensation plans. Among the topics covered are cost behavior, cost-volume analysis, relevant costs, and the use of cost information for decision making. The course will rely on lectures and discussion of case studies.

Enforced Prerequisite at Enrollment: ACCTG 211 and (SCM 200 or STAT 200) and ECON 102

Changes Effective Summer 2026:

- Changed Course Description
- Changed Prerequisites

ACCTG 405: Principles of Taxation I (3 Credits)

Old Listing Effective Through Spring 2026:

ACCTG 405 Principles of Taxation I, (3) Introduction to Taxation, is the first course that undergraduate accounting majors take that is devoted entirely to taxation. Although the course is intended for accounting majors, the content is relevant to finance majors seeking elective courses. The objective of the course is to provide students with a basic understanding of the concepts, terminology, and decision-making skills specific to the discipline of taxation that are germane to the professional development of those preparing for a career in accounting. Although the course surveys the many forms of taxation that are found in industrialized societies, and the comparisons thereof, the main focus is on the federal income taxation of individuals. However, coverage is provided regarding the manner in which the taxation of individuals relates to corporate and partnership entities. ACCTG 405 is related to other accounting courses through its coverage of income concepts, and micro-economic principles. The former compares differences in the measurement of financial accounting income with the manner in which income is determined according to the tax laws. The latter emphasizes business decision-making principles that are important in the managerial portion of the accounting program. The course covers topics that illustrate fundamental tax strategies and how such enable taxpayers to achieve business and personal economic objectives. The assessment process in ACCTG 405 incorporates examinations, homework assignments, and individual and group projects. The exams are combinations of objective questions and open-ended problems. Exams are often given in the evening. Course learning aids include a text book, on-line tax research services, spreadsheet software, and a packet of handouts prepared by instructors to keep the classes updated on the many changes in the tax laws that occur each year.

Enforced Prerequisite at Enrollment: ACCTG 211 and (BA 301 or FIN 301)

Changes Effective Summer 2026:

- Changed Course Description
- Changed Prerequisites

ACCTG 471: Intermediate Financial Accounting I (3 Credits)

Old Listing Effective Through Spring 2026:

ACCTG 471 provides students with an understanding of generally accepted accounting principles and procedures so that they properly account for and present information in financial statements prepared for external users. The student should acquire a complete understanding of the accounting issues relating to cash, receivables, inventory, plant assets, natural resources, and intangibles. The student should be able to evaluate alternative accounting methods and choose the methods which will best convey the financial information related to the above areas. The student should be able to apply appropriate generally accepted accounting principles and procedures to account for transactions related to the above asset areas. The student should be able to demonstrate an understanding of the transaction analysis, recording, classification, summarization, and reporting procedures in the accounting cycle, and an understanding of the information contained in the financial statements.

Finally, student should be able to demonstrate written communication skills required of accountants.

Enforced Prerequisite at Enrollment: ACCTG 211 or ACCTG 311

Changes Effective Summer 2026:

- Changed Course Description
- Changed Prerequisites

AMST 423: Folk Groups and Genres (3 Credits)

Old Listing Effective Through Spring 2026:

We live surrounded by folklore. From the jokes and stories we tell, to the ways we cook and eat, work and dress, even how we interact using digital media, much of what we do in our lives involves tradition. This course will provide students with detailed study of American folklore through an in-depth focus on a specific social group or creative genre. Topics covered may include group-based material such as ethnic folklore; the folklore of age groups; folklore, gender and sexuality; and occupational folklore; as well as units on genre categories such as folk narrative (folktale, legend, myth), verbal genres (proverbs, rhymes, jokes), customary forms (parades, festivals, dancing, games), material culture (dress, folk art, foodways), and musical forms (folk song, folk music). At the conclusion of this course, students will be able to explain key concepts in the study of folklore such as tradition, folk group, genre, performance, and practice, as well as how these concepts can be applied in the analysis and interpretation of culture. Students will also develop practical skills in ethnography, including participant observation, interviewing, audio and video recording, field note taking, fieldwork ethics, and folklore archiving. As part of this course, students will undertake a significant ethnographic research project, culminating in a comprehensive portfolio of field materials and an analytical or interpretive paper.

PREREQUISITE: (AMST 105; OR ENGL 105) AND (AMST 196; OR ENGL 196)

Changes Effective Summer 2026:

- Changed Course Number to 340
- Changed Prerequisites
- Added Recommended Preparation

AMST 480: Museum Studies (3 Credits)

Old Listing Effective Through Spring 2026:

An introduction to the basic purposes, philosophies, and functions of a museum, with emphasis on the problems of museum administration. (May be repeated for credit.) AMST 480 Museum Studies (3) An introduction to the basic purposes, philosophies, and functions of a museum, with emphasis on the problems of museum administration. The course examines applications of American Studies to mechanics of operation and development of core services including exhibits, structured educational programs, and special events. The course places these functions within the philosophy of the "experience economy," whereby museums and historical organizations are challenged to meet expectations of an increasingly sophisticated audience.

Prerequisite: 6 credits in American Studies

Changes Effective Summer 2026:

- Changed Course Description
- Removed Prerequisites

ANSC 309: Beef Cattle Production and Management (4 Credits) **Old Listing Effective Through Spring 2026:**

Beef Production and Management will provide a comprehensive review of the business-related and production oriented concepts associated with modern beef production. This course will combine traditional disciplines of beef management with business management, operations management, quality control and marketing. Additional topics will include economics and factors affecting cost of production. As the course progresses, and following the exposure of students to the fundamentals of beef production, they will be given the opportunity to evaluate real production scenarios for development of business and management recommendations. In addition to the classroom, the Penn State Beef Center, College computer labs, and selected field trips will comprise the facilities used to teach the course. In addition, students will conduct problem solving exercises on beef enterprises throughout the state. Beef Production and Management will be included in the series of other production courses offered in this department. Having completed the course, students will be able to: 1. Describe the necessary management procedures in a beef enterprise that are vital for efficient and profitable production. 2. Describe and understand the fundamentals of the various segments of the cattle industry. 3. List the important components of a business management plan for a beef operation, including short and long-term capital requirements, and a projected budget. 4. Discuss the trends and important issues facing the beef industry in Pennsylvania, the nation and world. 5. Critically evaluate business and production scenarios to provide an in depth analysis and a recommended course of action for improving a beef enterprise.

Enforced Concurrent at Enrollment: ANSC 201

Changes Effective Summer 2026:

Changed Credits
 Changed Course Description

ANTH 448: Ethnography of the United States (3 Credits) **Old Listing Effective Through Spring 2026:**

Ethnographic descriptions of various dimensions of life in the United States. ANTH 448 / AMST 448 Ethnography of the United States (3) Ethnographic descriptions of various dimensions of life in the United States. The course covers uses of ethnography in American Studies toward an understanding of social and cultural communication and performance. The application of ethnography and concepts of cultural anthropology to complex societies such as the United States is discussed. The course teaches students to use ethnographic methods for research of American society and culture. Attention is given to the ethics and issues of ethnographic fieldwork. The course satisfies the "area" requirement in "society" for American Studies majors.

Prerequisites: 3 credits of ANTH

Cross-listed Courses: AMST 448

Changes Effective Summer 2026:

- Changed Course Description
- Changed Prerequisites

BA 364Y: International Business and Society (3 Credits) [US] [IL] [WAC] **Old Listing Effective Through Spring 2026:**

Business organizations and the sociocultural environment; current issues; corporate responsibility; international and multinational business environments.

B A 364YtB A 364Y International Business and Society (3) (US;IL) This writing-intensive course will provide an overview of the relationship between business organizations and the sociocultural environment. Current issues in the media and the scholarly literature will be used to discuss and analyze this relationship. Special attention will be given to the topics of business and government relationships, corporate responsibility, environmental issues, and topics related to international and multinational business environments.

Enforced Prerequisite at Enrollment: ENGL 202D and MGMT 301

Changes Effective Summer 2026:

- Changed Course Description
- Changed Prerequisites

BA 495A: Business Internship (3-6 Credits: Maximum of 6 Credits) **Old Listing Effective Through Spring 2026:**

B A 495A Business Internship (3-6 per semester/maximum of 6) B A 495A facilitates the application of students' prior classroom learning in a field setting. This course is one of a series in the business program which collectively develop the skills and competencies necessary for success as a business administration student. The course is designed to provide students with a firsthand opportunity to experience the challenges and rewards of the business professional. Essentially, an internship bridges the gap between the academic environment and the professional environment. Internships provide an opportunity for students to link theory with practice in a nonacademic setting. Internships provide practical, real-world experiences which cannot be simulated in the classroom. Upon successful completion of an internship, students will: -Have a better understanding of employer expectations related to career advancement. -Have an enhanced strategic view of the industry/business segment in which they worked. -Have experience integrating and using their knowledge and skills from the classroom. -Have increased awareness of professional and technical areas of strengths and weakness.

Enforced Prerequisite at Enrollment: BA 321 and BA 322 and BA 420 and Permission of program.

Changes Effective Summer 2026:

- Changed Course Description
- Changed Prerequisites

BE 306: Machines for Agricultural and Biological Processing (3 Credits) **Old Listing Effective Through Spring 2026:**

This course is designed to provide a broad foundation for understanding machine system design for Biological Engineering students. In addition, this course serves as a foundation for those wishing to develop a more focused understanding of agricultural and general machine systems, and is a prerequisite for ASM and BE 400 level courses. Machine systems are an integral part of many agricultural operations from field production to post-harvest processing, storage, transportation, and bio-based processing. Biomass feedstock logistics and bioenergy production systems are heavily relying on machine systems. Biological Engineers will likely encounter a wide range of powered and automated equipment in their careers. This course consists of lectures, labs, and open-ended

design projects. The lab activities will focus on testing and evaluating of machine performance using prototype machines and instruments. Lab activities and design projects will be completed in the format of small groups. This course equips the students to: (1) describe operating characteristics of engines and motors and properly select models for different applications; (2) design machine elements and mechanical power transmission systems to accomplish a machine task; (3) apply basic physics and engineering principles in a variety of machine-product interaction situations; and (4) practice technical report writing and oral presentation.

Enforced Prerequisite at Enrollment: EMCH 212 and (EMCH 210 or EMCH 213)

Changes Effective Summer 2026:

- Changed Course Title
- Changed Abbreviated Title
- Changed Course Description

BIOET 110N: Health, Illness, and the Human Condition (3 Credits) [GH] [GS]

Old Listing Effective Through Spring 2026:

This survey course explores the human experience of health and illness from a combined social/behavioral science and humanities perspective. Topics may include the following: the body in art, science, and history; models of normality and disease; family, patient, and practitioner stories; adaptation to illness; health care relationships; principles and psychology of health care ethics; cultural aspects of end-of-life; identity, meaning, and mental health in health care professionals.

Reading, writing, and discussion will give students in all majors a set of skills and knowledge for understanding individuals and groups in the context of health and illness. Texts include fiction; poetry; graphic memoir; film; essays; and social science research and theory. Students will experiment with various writing genres to understand and challenge disciplinary boundaries, and creative projects will provide experience with diverse methods and types of knowledge.

The arena of health and illness presents a valuable opportunity for integrating social/behavioral science and humanities in analyzing and solving real world problems. Despite technological advances, health care is essentially a human-to-human endeavor, so the humanities and social sciences are necessary to complement biomedical perspectives. This course provides transferable skills and a framework for addressing similar challenges and opportunities in a range of fields that students may encounter in the future.

This is an Inter-Domain course containing two general education domains (GH/GS). Successful completion of the course fulfills 3 credits of Integrative Studies in General Education. Prerequisite: ENGL 15

Prerequisite: ENGL 015.

Cross-listed Courses: HHUM 110N

Changes Effective Summer 2026:

- Changed Course Description
- Removed Prerequisites
- Added Recommended Preparation
- General Education Recertification

BIOL 403: Biological Writing and Communication for Research (3 Credits) [GWS]

Old Listing Effective Through Spring 2026:

Each student will pose and address their own research question with support from the scientific research literature. Each student will share their own research findings in written and oral formats, both for scientific and general public audiences. Data to address each student's research question can come from their own undergraduate research or from queries with publicly-available data sets. Students should expect to give and receive regular peer feedback on writing assignments relating to their research project and incorporate that feedback from peers and from their teacher in synthesis projects. Synthesis projects, where students are expected to integrate and make revisions to writing from the semester, include a short research manuscript, a research poster and oral presentation, and a blog post geared toward the general public. Weekly workshops paired with readings on scientific theory about writing and communication will help students practice technical science writing in general.

Enforced Prerequisite at Enrollment: (BIOL 110 or BIOL 110H or MICRB 201 or MICRB 201H or BMB 251 or BMB 251H or STAT 200 or STAT 250) and (ENGL 15 or ENGL 137H or CAS 137H or ENGL 30H)

Changes Effective Summer 2026:

- Changed Course Number to 403W
- Added Writing Across the Curriculum (WAC) Attribute
- Removed General Education: Writing/Speaking (GWS) Attribute

BRASS 231: French Horn: Performance III (3 Credits)

Old Listing Effective Through Spring 2026:

Individual instruction in French horn one hour per week. For B.M. and B.M.A French horn performance majors.

Changes Effective Summer 2026:

- Changed Credits

CI 488: Designing Assessment and Curriculum for Multilingual Learners (3 Credits)

Old Listing Effective Through Spring 2026:

English as a Second Language (ESL) Program Specialists play multiple roles in schools and classrooms. They collaborate with classroom teachers to identify and assess newcomers, assist in the adjustment of new students into the school and classroom, and most importantly, build a caring and pedagogically sound classroom environment for multilingual learners (MLs). In this course, our focus will be on how teachers can design and implement a curriculum that integrates language and content-area learning. The course will prepare ESL Program Specialists to better attend and develop MLs' literacy skills while engaging them in rigorous grade-level curriculum to meet Pennsylvania content and English language development standards. The course will cover topics such as linguistic differentiation, translanguaging pedagogies, classroom discourse practices, multimodal learning strategies, and ongoing formative assessments.

Prerequisite: CI 280 Recommended Preparations: CI 288 and CI 388

Changes Effective Summer 2026:

- Changed Prerequisites
- Removed Recommended Preparation

CMPEH 472: Microprocessors (4 Credits)

Old Listing Effective Through Spring 2026:

This course is designed to provide students with strong foundation in microprocessor programming and hardware interfacing both in the classroom and laboratory settings. This course is a required course in the Electrical Engineering BS curriculum and is intended to be taken by students who have completed their digital systems and first electronics course requirements. As such, the course integrates materials from the above undergraduate electrical courses in addition to related math, engineering, and science courses.

PREREQUISITES: (CMPSC 101; CMPSC 121; CMPSC 131; CMPSC 201; CMPSC 202) (CMPEN 271, CMPEN 275; CMPEN 270)

Changes Effective Summer 2026:

- Changed Course Abbreviation to CMPEN
- Changed Course Number to 372
- Changed Course Title
- Changed Abbreviated Title
- Changed Credits
- Changed Course Description
- Changed Prerequisites

COMM 342W: Idea Development and Media Writing (3 Credits) [WAC]

Old Listing Effective Through Spring 2026:

Introduction to various modalities of idea development and written expression for media production. COMM 342 Idea Development and Media Writing (3) This writing-intensive course is designed to introduce students to various modalities of idea development and expression for audio-visual projects. Writing as an ideational, descriptive or reflexive tool is an integral element of each modality. Learning objectives encompass the development of skills in the following areas: Conceptualization, Visualization, Decision-making, Intellectual articulation and Manifestation. Emphasis will be placed on using written work as an integral part of the creative process. As a designated W course, students will gain experience in the writing of media criticism and analysis as well as learning the writing styles specific to the profession. Writing assignments will include informal writing such as exercises in intuitive and timed writing, one minute response papers and collective story telling. Formal writing assignments will include observational essays, descriptive essays or stylistic "treatments", formal narrative proposals, analytic and editorial story reports, and self-reflexive critique papers. Students will progress through a series of creative exercises that support the development of the above skills consisting of short (200-500 word) written and oral exercises, exercises in visual thinking, visual storytelling and image composition and longer (750-1500 word) written assignments in various forms (descriptive, persuasive, analytical, editorial and critical) tailored to the professional requirements of the film-video major; these include descriptive essays or stylistic "treatments" formal narrative proposals, analytic and editorial story reports, and self-reflexive critique papers. Written feedback from the instructor will be provided on a regular basis, as well as in class peer critique and story workshops. Students will be required to redraft and rewrite assignments as needed.

Changes Effective Summer 2026:

- Changed Course Title
- Changed Abbreviated Title
- Changed Course Description

COMM 481: Advanced Multimedia Production (3 Credits)

Old Listing Effective Through Spring 2026:

Advanced work in multimedia production using web authoring, video editing, audio editing, image editing and animation software. COMM 481 Advanced Multimedia Production (3) This course builds on the foundations of multimedia production developed in COMM 270 giving students the opportunities to create multimedia website projects. Students will apply advanced multimedia concepts and techniques to website production and demonstrate versatility in multimedia software. Working individually and in teams, students will develop projects for clients using multimedia software, including web authoring, video editing, audio editing, image editing and animation software. These projects will be uploaded to the World Wide Web, and will serve as portfolio materials for the students. This course emphasizes skills development in multimedia and visual media in support of program objective to help students develop cross-media skills and versatility in media. Enforced Prerequisite at Enrollment: COMM 465 or COMM 269

Changes Effective Summer 2026:

- Changed Course Title
- Changed Abbreviated Title
- Changed Course Description

DMD 300: Digital Multimedia Design Studio (3 Credits)

Old Listing Effective Through Spring 2026:

Students adapt skills and knowledge of digital media to solve problems and communicate ideas in producing collaborative multimedia projects. In DMD 300 Digital Multimedia Design Studio, students synthesize the concepts, theories, and applications acquired in the introductory courses and begin to think critically about their professional objectives. Students will work on projects aimed to help them understand available learning pathways and real world applications based on their scholarly and professional interests. Students will work collaboratively to investigate a problem space, conduct a needs assessment, write a design plan or proposal, develop deliverables, and implement and evaluate the final product(s). Students will develop a sense of stewardship over the project development process by completing project milestones that reinforce time management behaviors, participating in team building activities that facilitate discussion and interaction, co-authoring project proposals that prompt critical analysis, and distributing production tasks to encourage ownership in completing both defined and open-ended assignments. Students will also be required to thoroughly document and reflect on the production process and project impact through blogging and discussions. Through the duration of the course, students are encouraged to interact with industry advisors for feedback and direction as they work through real-world challenges in their selected digital tools and methodologies.

Enforced Prerequisite at Enrollment: DMD 100 and 9 credits from the following list: IST 140, IST 250, COMM 230W, COMM 215, DART 202, ART 211Y

Changes Effective Summer 2026:

- Changed Course Description
- Changed Prerequisites

DMD 400: Digital Multimedia Design Capstone (3 Credits) **Old Listing Effective Through Spring 2026:**

In this capstone, students develop portfolio projects by applying creative production concepts, tools, and approaches to a contemporary issue. DMD 400 Digital Multimedia Design Capstone is an advanced, senior-level capstone experience, students will synthesize the concepts, tools, and approaches learned throughout their studies and demonstrate competencies in creative and technical production in an applied human-centered thesis project. Students will work as change agents to address a critical, real-world, local or global issue or challenge and work through the design process to complete a capstone project. Students will explore processes in interdisciplinary problem spaces and connect to broader context of design decisions promoting agency over project outcomes, applications, deliverables, and knowledge-sharing. Student projects will include design proposals and/or implementations for digital or physical products and systems. To examine their understanding of design leadership, students will practice design thinking and production methods to generate project ideas, discover opportunities, and communicate intent; practice systems thinking to define the boundaries and impact of a problem space; and practice critical thinking to evaluate research issues, develop meaning, and inspire creative output. Students will be able to deploy project management skills to ensure on-time delivery of final project, communicate project concepts through visual models, and will leverage a variety of digital resources and methods to disseminate work in online contexts including social media, websites, and others.

Enforced Prerequisite at Enrollment: DMD 100 and DMD 300

Changes Effective Summer 2026:

- Changed Credits

EDSGN 452: Projects in Humanitarian Engineering (2 Credits) **Old Listing Effective Through Spring 2026:**

Multidisciplinary student teams engage in integrated design of real-world humanitarian ventures. EDSGN 452 Projects in Humanitarian Engineering (2)EDSGN 452 is intended to promote civic responsibility and enhance the student's abilities to engage in research and design, project management, communications, professional conduct and the understanding of user needs. This is accomplished by students undertaking team-based engineering projects in community service with partner community organizations. The projects offer real-world engineering design experience, from problem formulation through performance assessment. The project offerings will include a mix of local and international offerings. Students work on multidisciplinary teams with a project supervisor (i.e., faculty or practicing engineer) and a representative from the partner community organization. Projects are selected based on academic content, potential significance to the partner community, commitment of the partner community organization, and student safety. Students also examine the politics of technology, the relationship between engineering and communities (either domestic or international), and ethics in engineering practice. This includes the ways that engineering can be used positively and negatively in development. In the course of their work, the students will examine the ways that economic, social, cultural, political, and other contextual considerations are implicated in engineering design. Students are challenged to think critically about how engineering can be done most effectively to support community goals, and how engineering can weaken community efforts if done insensitively. These issues are explored through discussions of the

relevant scholarly theory and through their manifestation in the course projects.

Enforced Prerequisite at Enrollment: 5th semester standing
 Enforced Concurrent at Enrollment: EDSGN 453

Changes Effective Summer 2026:

- Changed Credits
- Changed Course Description
- Changed Prerequisites

EE 317: Circuits II and Data Acquisition (2 Credits) **Old Listing Effective Through Spring 2026:**

EE 317 Circuits II and Data Acquisition This course is a follow up to the introductory circuit analysis course. The first part of this course is devoted to the study of multi-phase circuits, magnetic coupling, two-port networks and their applications. The second part of the course is devoted to automated instrument control with emphasis on data acquisition and processing, and printed circuit boards manufacturing. Student performance is evaluated using exams, homework assignments, and projects. Concepts introduced in lecture are reinforced with hands-on experience provided by laboratory projects.

Enforced Prerequisite at Enrollment: EE 210 and (CMPSC 201 or CMPSC 121 or CMPSC 101)

Changes Effective Summer 2026:

- Changed Course Title
- Changed Abbreviated Title
- Changed Credits
- Changed Course Description
- Changed Prerequisites

EE 405: Capstone Proposal Preparation (1-3 Credits) **Old Listing Effective Through Spring 2026:**

This course guides students in the development of their capstone design project proposal and will mimic the problems encountered by an engineer working in commercial, industrial, and governmental entities. Students will select a topic, do the initial research for the topic, prepare a timeline, and prepare a well-written proposal that would make a suitable capstone project. The proposal will incorporate relevant engineering standards and integrate realistic economic, environmental, sustainability, manufacturability, ethical, health and safety, social, and political constraints. The time devoted to the careful selection of a topic, research of that topic, development of a timeline, and formal proposal preparation makes for a much better capstone design experience in EE 406W.

Enforced Prerequisite at Enrollment: ENGL 202C and (CAS 100A or CAS 100S)
 Enforced Concurrent at Enrollment: CMPEH 472 and EE 311 and (EE 461 or EE 481 or EE 488)

Changes Effective Summer 2026:

- Changed Prerequisites
- Changed Concurrents

EE 481: Control Systems (4 Credits) **Old Listing Effective Through Spring 2026:**

Classical/modern approaches to system analysis/design; time/frequency domain modeling, stability, response, optimization, and compensation.

E E 481 Control Systems (4) This course presents both classical and modern approaches to the modeling, analysis and control system design for continuous time systems. Students learn how to model both mechanical and electrical systems in the time and frequency domains using differential equations, transfer functions, state space methods and frequency domain (Bode) techniques. The goal of developing linear system models is to facilitate system analysis and control design. Modeling is followed by an in-depth study of systems analysis, including stability, transient response and steady state characteristics. The study of stability involves examining the effects of pole and zero placement, and the Routh criterion is used extensively. In the consideration of transient response characteristics, students investigate rise time, peak time, overshoot, and settling time. The primary steady state feature studied is the error between the reference signal input and the system output, and students learn to characterize steady state error through the determination of system type and computation of the error constants. Design of control systems focuses on altering one or more of the system characteristics by adding compensation. Students employ a variety of root locus techniques, proportional-plus integral-plus-derivative (PID), state feedback, and frequency response methods. Students begin with simple proportional, closed-loop control and examine pole migration through root locus plots. They then learn to apply more robust pole placement techniques using proportional and derivative (PD) control. Next, PID controllers are examined with a number of opportunities for design. After learning the classical control techniques, students then concentrate on state feedback control methods, including the design of partial- and full-order observers. Finally, students learn the relationship between time domain analysis and design and frequency domain (Bode) analysis of both magnitude and phase. This course includes a laboratory in which students use MATLAB and Simulink for modeling, analysis and control system design. A minimum of seven laboratory exercises offer students the opportunity to experiment with nearly every concept in a powerful simulation environment. To be successful in this course, students should have a solid background in differential equations, Laplace transform techniques, Bode analysis, linear algebra, complex variables, and they should have a familiarity with MATLAB.

Enforced Prerequisite at Enrollment: PHYS 211 and EE 352

Changes Effective Summer 2026:

- Changed Course Description
- Changed Prerequisites

EET 419: Capstone Proposal Preparation (1-3 Credits)
Old Listing Effective Through Spring 2026:

This course guides students in the development of their capstone design project proposal and will mimic the problems encountered by an engineer working in commercial, industrial, and governmental entities. Students will select a topic, do the initial research for the topic, prepare a timeline, and prepare a well-written proposal that would make a suitable capstone project. The proposal will incorporate relevant engineering standards and integrate realistic economic, environmental, sustainability, manufacturability, ethical, health and safety, social, and political constraints.

The time devoted to the careful selection of a topic, research of that topic, development of a timeline, and formal proposal preparation makes for a much better capstone design experience in EET 420W.

Enforced Prerequisite at Enrollment: ENGL 202C and (CAS 100A or CAS 100S) Enforced Concurrent at Enrollment: EET 312 and EET 331 and (CMPEH 472 or CMPET 211)

Changes Effective Summer 2026:

- Changed Prerequisites
- Changed Concurrents

ENGR 407: Technology-Based Entrepreneurship (3 Credits)
Old Listing Effective Through Spring 2026:

Technology innovation coupled with business planning and development.

Enforced Prerequisite at Enrollment: ECON 102 or ECON 104

Changes Effective Summer 2026:

- Changed Course Title
- Changed Abbreviated Title
- Changed Course Description
- Changed Prerequisites

ENGR 411: Entrepreneurship Business Basics (3 Credits)
Old Listing Effective Through Spring 2026:

Three critical entrepreneurship skills are covered for non-business majors: business finance, intellectual property, and marketing. Untitled Document ENGR 411 Entrepreneurial Business Basic (3) ENGR 411 covers three critical skill areas of non-business students: business finance, intellectual property, and marketing. These business areas are covered in three sequential 5-week modules over the semester. This course emphasizes problem-based learning (PBL), in which students engage in real-world problem-solving exercises each and every class period. With this learning approach, students develop and use skills sets in financial management, intellectual property management, and both business-to-consumer marketing (B2C) and business-to-business marketing (B2B). Each student is responsible for all course material and completing all PBL exercises covered in class, whether present or not. Student presence and preparation in every class period is expected. To encourage active learning of ENGR 411 course material, students are divided into small discussion and working teams. Discussion teams will be responsible for: 1) developing questions for class interaction; 2) highlighting the important points of the readings/case studies; and 3) solving problems and presenting solutions to the class. Up to three technology businesses or events of current interest will be analyzed during the semester. These case studies bring out the interdependence of finance, intellectual property, and marketing decisions in product creation. Example business case studies include Napster and the Bridgestone/Firestone litigation.

Enforced Prerequisite at Enrollment: Three credits in ECON

Changes Effective Summer 2026:

- Changed Course Title
- Changed Abbreviated Title
- Changed Course Description
- Changed Prerequisites

FIN 301: Corporation Finance (3 Credits)
Old Listing Effective Through Spring 2026:

This course provides a basic understanding and framework of how firms acquire, allocate, and control their financial resources. It covers the acquisition and management of corporate capital; analysis of operations, forecasting capital requirements, raising capital, and planning profits. This is a core finance course focusing on basic financial principles and practices essential to managing a business. In addition, this course also covers financial markets, institutions, organizational forms and investments. It relies heavily on accounting and economic principles with a strong emphasis on problem solving and decision making. One objective of this course is to be able to assess the past and present performance of the firm. This can be achieved through vertical and horizontal analysis of the financial statements as well as ratio analysis. Another aspect of this course is the financial planning process. This includes concepts such as pro forma statements, developing the statement of cash flows, as well as the budgeting process through the preparation of the cash budget. Another facet of this class is to understand how financing and investment decisions are made. Students will learn about the time value of money as well as fundamental techniques for valuing financial assets such as stocks and bonds. Additionally, capital budgeting techniques such as the net present value and internal rate of return are explained. Other important objectives include the management of working capital, the determination of the cost of capital, operating and financial leverage, and risk and return. The concepts and tools covered in this class allow the student to gain a fundamental understanding of how the finance function works within the business environment. The course promotes critical thinking and will enable the student to better integrate the individual functions of a business in order to make good business decisions. A student may receive credit toward graduation for only one of the following; BA 301, FIN 100, FIN 301, or FIN 301H.

Enforced Prerequisite at Enrollment: (ENGL 15 or ENGL 30H or ESL 15 or ENGL 137H or CAS 137H) and ACCTG 211 and (ECON 102 or ECON 104) and (SCM 200 or STAT 200)

Changes Effective Summer 2026:

- Changed Course Description
- Changed Prerequisites

FIN 301H: Corporation Finance (Honors) (3 Credits) [H]
Old Listing Effective Through Spring 2026:

FIN 301H honors course provides insight into real world issues that are needed to effectively run a business. Students will utilize the fundamental concepts learned in finance (integrated with accounting, marketing, management, logistics, operations, and business law/ethics) as a foundation for running a business in the classroom. The "product" in this business will be a comprehensive strategic business plan for a real, live local, state, national, or international business that will serve not only as an articulation of understanding of core course concepts, but also as a supplement to the existing core package of introductory business courses. The honor students in this course will be building their strategic business plan products in electronic format in closely-knit, high performance teams. The strategic plan product development process in this course inherently involves integration across the functional areas of business: marketing, logistics, finance, and management. There is also inclusion and integration of courses in accounting, business law, management information systems, and statistics as applicable. Each student team will allocate product development responsibilities according to areas of expertise and interest. An appropriate balance of students from several majors will be assigned to each group. Class time will involve exchanging information within and across groups and

coordinating activities between groups where necessary. Students will periodically meet with individual and team-based corporate mentors who will provide one-on-one advice on an as-needed basis. Students will also receive specialized training in team-based processes, leadership, and technology tools required to implement the products under development. Select members of the Penn State faculty and Smeal College alumni will be on hand at times to provide this specialized training and consulting expertise. Company owners and principals will provide periodic (monthly) reviews of honor students' work to assist them in the development of a first-class, professional business plan product.

Enforced Prerequisite at Enrollment: (ENGL 15 or ENGL 30H or ESL 15 or ENGL 137H or CAS 137H) and ACCTG 211 and (ECON 102 or ECON 104) and (SCM 200 or STAT 200)

Changes Effective Summer 2026:

- Changed Prerequisites

FRNSC 410: A Scientific Approach to Crime Scene Investigation (2 Credits)

Old Listing Effective Through Spring 2026:

Principles of crime scene investigation with emphasis on scientific philosophy, concepts, and procedures. FRNSC 410 A Scientific Approach to Crime Scene Investigation (2) In this course, students will learn many of the essential principles and techniques of crime scene investigation. The necessity of a rigorous scientific approach will be stressed. This course uses an intensive, problem-solving style to teach scene management and the recognition, evaluation, enhancement, documentation, control, and collection of physical evidence. Students will be introduced to: * Scene management principles * Search techniques * Techniques to recognize, enhance, document, and collect various types of physical evidence * Communication of procedures and results * Scene reconstruction and its role in a scientific investigation The primary aim of the course is to immerse students in the scientific philosophy, integrity, scene investigation procedures, criminalistics, and role of the criminalist as they relate to scene investigation.

Enforced Prerequisite at Enrollment: FRNSC 210 and (STAT 200 or STAT 250)

Changes Effective Summer 2026:

- Changed Abbreviated Title
- Changed Prerequisites
- Changed Course Description

FRNSC 485: The Profession of Forensic Science (2 Credits)
Old Listing Effective Through Spring 2026:

This course will prepare students to make the transition to professional careers in forensic science and allied fields. The primary goals of this course are to: · Prepare students for the process of seeking and obtaining professional employment in forensic science or an allied field. In addition to standard employment practices, these activities (lectures and exercises) include behavioral-based mock interviews, preparation for background investigations and civil-service employment practices. · Develop professional standards and practices in forensic science which will not only prepare students to enter the field, but to excel and advance throughout their careers. These activities will include discussions of laboratory operations, quality assurance/quality control, professional conduct, ethical reasoning and laboratory safety. · Finalize students' education in forensic science and criminalistics through activities in

case integration. The case integration activities prepare students to incorporate available information into the investigative process and to serve as consultants to the criminal justice system. · Prepare each student to sit for a comprehensive exam, to include the full content of coursework across the scope of the Forensic Science Program. This will be administered using the Forensic Science Assessment Test (FSAT) offered by the American Board of Criminalistics (ABC) or its equivalent.

Enforced Concurrent at Enrollment: FRNSC 421W or FRNSC 427W

Changes Effective Summer 2026:

- Added Prerequisites
- Removed Prerequisites

GER 83: First-Year Seminar in German (3 Credits) [BA] [US] [IL] [FYS] [GH]

Old Listing Effective Through Spring 2026:

Germany's cultural past and present. GER 083S First-Year Seminar in German (3) (GH;FYS;US;IL)(BA) This course meets the Bachelor of Arts degree requirements. This course is designed to give the student an introductory overview of certain important aspects of German culture and its development during the past 1500 years. The topics selected will give the student an introduction to major periods and representative thinkers that have helped shape the destiny of German-speaking countries and much of Europe as well. As Goethe noted, our views of the past are a mirror in which we dimly see our own reflection. Serious examination of the issues raised in this course also result in learning something about one's self and the world in which s/he live today. This course can be used to fulfill the General Education or Bachelor of Arts Humanities requirement, the Intercultural/International Competence requirement, and the first year seminar requirement. A series of short papers will enable students to develop the skills of information gathering and written expression. The course grade will be based on oral participation and on the grade for the papers, which will be evaluated both for content and writing. This course will help to prepare students for a variety of additional courses in the fields of literature and German-speaking area studies. In addition to the academic topic and issues of this course, students can expect to gain a general introduction to the University as an academic community and have the opportunity to explore their responsibilities as members of that community. Students will develop an understanding of the learning tools and resources available to them, including the opportunity to develop relationships with faculty and other students who share their academic interests. The course will be offered once per year to an audience of 20 students.

Changes Effective Summer 2026:

- Changed Course Description

GER 412: Contrastive Analysis of Modern German and English (3 Credits) [BA] [IL]

Old Listing Effective Through Spring 2026:

Structural comparison of the German and English grammatical systems:morphology, syntax, phonology.

PreRequisite: or concurrent: GER 401Y

Changes Effective Summer 2026:

- Changed Course Title
- Changed Abbreviated Title

- Changed Course Description
- Added Exceeds 12th Unit of World Language Attribute

GER 430: History of the German Language (3 Credits) [BA] [IL] Old Listing Effective Through Spring 2026:

Development of German from its earliest stages, including historical and cultural aspects.

GER 430 History of the German Language (3) This course provides an overview of the history of the German language from its origins to the present. Historical changes and dialectal variation in phonology (sound system), morphology (word structure), syntax (sentence structure), lexicon (vocabulary), and semantics (word meaning) will be examined. Particular emphasis is placed on the impact of cultural and historical changes on the development of German, including its standardization. Students will be evaluated on the basis of homework, classroom participation, tests, and an in-class presentation with a written abstract. No prior knowledge of linguistics is required. The class is conducted in German.

PreRequisite: or concurrent: GER 401Y

Changes Effective Summer 2026:

- Changed Course Description
- Added Exceeds 12th Unit of World Language Attribute

GER 432: History of German Literature and Culture II (3 Credits) [BA] [IL]

Old Listing Effective Through Spring 2026:

Significant works of German literature from the mid-eighteenth century to the present considered in their cultural context.

Prerequisite or Concurrent: GER 401

Changes Effective Summer 2026:

- Changed Course Title
- Changed Abbreviated Title
- Changed Course Description
- Removed International Cultures (IL) Attribute

HCDD 264: Design Practice in Human-Centered Design and Development (3 Credits)

Old Listing Effective Through Spring 2026:

This course focuses on concepts, methods, techniques, and tools for designing effective technology-enabled experiences. The course will provide students with all the elements for a toolbox they can use to design and create both prototypes and working applications, and some analytic methods they can use to perform basic evaluations. The course will emphasize iterative design and the benefits of employing a cycle of analyze - design - built - evaluate in close cooperation with prospective technology users and other product stakeholders.

In addition to more practice-oriented skills and knowledge, the course will provide students with an appreciation for some persistent design challenges including managing design trade-offs, ensuring universal and international access, working with others on co-design, and receiving and delivering design critiques. Students who successfully complete the course will leave equipped to engage with practicing design teams in industry, government, and academia.

Enforced Prerequisites at Enrollment: HCDD 113 or HCDD 113S

Changes Effective Summer 2026:

- Changed Prerequisites

HIST 119: Gender and History (3 Credits) [BA] [IL] [GH]
Old Listing Effective Through Spring 2026:

Survey of the development of gender roles in Western societies from the pre-modern prehistoric era to the early modern period.

Changes Effective Summer 2026:

- Changed Course Description
- Removed Bachelor of Arts: World Cultures and Bachelor of Arts: Social and Behavioral Sciences Attributes

HORT 201: Applied Arboriculture (2 Credits)
Old Listing Effective Through Spring 2026:

The objective of this course is to provide students with the opportunity to develop an appreciation of the skills required to properly care for large trees. The course provides information that is especially useful to those in the Landscape Management option of the Landscape Contracting major. The course will provide an overview of the methods used to diagnose problems and provide for the long term care of large trees. Areas of emphasis will include accessing the upper parts of large trees, safety when working in and around large trees, and the proper selection, use, and maintenance of the equipment used in the arboriculture profession.

Recommended Preparation: Students should be physically capable of pulling their weight up a rope

Changes Effective Summer 2026:

- Added General Education: Health and Wellness (GHW) Attribute

IE 453: Simulation Modeling for Decision Support (3 Credits)
Old Listing Effective Through Spring 2026:

Introduction of concepts of simulation modeling and analysis, with application to manufacturing and production systems. IE 453 Simulation Modeling for Decision Support (3) Simulation Modeling for Decision Support is a senior level course offered in the Department of Industrial and Manufacturing Engineering. It is the third course in operations research offered to the undergraduate students. The objective of this course is for students to learn to appropriately apply discrete event simulation modeling for decision support in IE problems through developing skills in model building, simulation output analysis, and communication of technical information and conclusions drawn from data analysis. Students taking this course should be familiar with computer programming and operations research techniques.

Enforced Prerequisite at Enrollment: (CMPSC 200 or CMPSC 201) and IE 323 and IE 425

Changes Effective Summer 2026:

- Changed Abbreviated Title
- Changed Course Description

IE 475: Modeling and Optimization of Stochastic Service Systems (3 Credits)
Old Listing Effective Through Spring 2026:

This course will cover the analysis, modeling, optimization, and evaluation of practically occurring service systems. The first part of the course will employ a queueing-theoretic approach for modeling service systems, which will cover the modeling and simulation of arrival processes via Poisson models and their variants, steady-state analysis for service models with exponential and general service time distributions, and non-stationary arrival processes. The second part of the course will expose students to modern data-driven approaches for uncertainty modeling, scheduling, and optimization of service systems. Case studies from service systems in diverse fields including but not limited to healthcare, call centers, transportation, and computer networks will be employed to supplement and reinforce the material.

Enforced Prerequisite at Enrollment: IE 304 and (IE 330 or STAT 380) and (IE 405 or STAT 440) and (IE 425 or STAT 416)

Changes Effective Summer 2026:

- Changed Prerequisites

INART 116: The Popular Arts in America: The History of Rock and Roll-The 1950s (3 Credits) [BA] [US] [GA]
Old Listing Effective Through Spring 2026:

This course examines the roots, development, and significance of rock and roll music in its first decade.

INART 116 INART 116 The Popular Arts in America: The History of Rock and Roll-The 1950s (GA;US)(BA) This course meets the Bachelor of Arts degree requirements. This course is composed of eight chronologically arranged units of study that examine the major developments in early rock and roll in an historical context. Rock and roll music, especially in the 1950s, was the reflection of the dynamic cross-cultural interplay between country, gospel, rhythm and blues, and mainstream pop. Of central importance in early rock and roll was the influence of African American music and culture and the effect that African American music and culture had when brought into the mainstream. Through an examination of the foundation of emergence of rock and roll in our culture, students gain an understanding of the role played by intercultural cross-influences in shaping both our music and our cultural sensibilities. Both the content of the course and the assignments in the Popular Music Forum are directed at helping students understand, reflect upon, and critically think about the intercultural nature and effect of our musical heritage. The thrust of the course is sociological and cultural rather than musicological, and the intent of the course is to provide students with a comprehensive overview of the early development of rock and roll and its importance in our social and cultural history. Each unit of study will be accompanied by key examples of recorded music from the period of the late 1940s through the 1950s. The course includes approximately 100 important recordings for required study. Grades in INART 116 will be determined by a series of eight objective tests and four assignments in the Popular Music Forum. The Popular Music Forum will examine important issues in popular music and culture concerning or related to rock and roll in the 1950s that require research, critical thinking, the formation of objective opinions, and discussion. The Popular Music Forum is conducted online as a series of asynchronous discussions on Forum topics. The class will be broken into groups of fifteen students for the purpose of discussion. Grading will be based on a point system. There are 1200 possible points that can be earned during the course - 800 points on exams (2/3 of the final grade) and 400 points on written assignments in the Popular Music Forum (1/3 of the final grade).

Changes Effective Summer 2026:

- Changed Abbreviated Title
- Changed Course Description

IST 402: Emerging Issues and Technologies (3-3 Credits: Maximum of 9 Credits)

Old Listing Effective Through Spring 2026:

Introduction to emerging issues, technology forecasting and analysis; overview of emerging issues and leading technologies in IST and how they impact information systems, users, the IT labor force and society. IST 402 Emerging Issues and Technologies (3 per semester/maximum of 9) Information Sciences and Technology (IST) is a rapidly changing discipline. New issues, methods, tools, applications and terminology appear on a continual basis. A key skill is the ability to analyze new issues and assess new technologies within the context of the information age. This course prepares students to understand the difference between potential technological failures and success, fads and revolutionary technology. It also helps students to view emerging issues as an opportunity rather than a threat. Intellectual tools are provided to assist in understanding issues, assessing and forecasting technological changes for feasibility and planning in real world situations. The course provides students with: a.) A process framework for analyzing new issues and a theoretical framework to study technological and social impacts of such issues. b.) A process framework for recognizing and understanding new technologies and a theoretical framework to take advantage of such technologies. c.) Exposure to new issues and technologies. d.) Hands-on experience in studying recent technological advances in detail. The course will also provide students with the ability to: a.) Understand the concept of issue analysis and technology forecasting. b.) Recognize the important of new issues and technologies in information sciences. c.) Incorporate these new issues and technologies into an existing information systems framework. d.) Develop and implement new technology solutions, or discuss policies for addressing emerging issues. e.) Predict impacts of issues and technology on information management, users, policies, and the environment. Each time the course is offered; new issues and/or information technology areas will be explored. Examples of issues and technologies addressed include: wireless communications, security and intrusion detection, intelligent agents, web search, languages, intelligent systems, bio-informatics, advanced visualization and human-computer interactions, ubiquitous pervasive computing, groupware, computer aided cognition, system design by global IT teams, IT outsourcing, and digital divide.

Enforced Prerequisite at Enrollment: IST 210 and IST 220

Changes Effective Summer 2026:

- Changed Prerequisites

IST 431: The Information Environment (3 Credits)

Old Listing Effective Through Spring 2026:

Survey of social environment of information technology themes: Community, sovereignty, privacy, ethics, economics, and knowledge management.

IST 431 The Information Environment (3) The ways that people communicate and utilize information is being changed dramatically by new information technologies. Information and the technologies that are employed by create, organize, transfer, and utilize that information in a networked environment, using such global networks as the internet or internal networks such as intranets, have become a key component of the global economy. This global environment can change the way we interact, communicate, and function on the job and in our daily lives.

The new technologies also raise new economic, legal, ethical, and social issues that are of grave importance to society. IST 431 examines the overall context of the new information environment and new technical issues relating to knowledge management in the global networked environment. IST 431 is a required course in the Information, Society and Public Policy Option. There may be some overlap of material with COMM 405, COMM 483, COMM 485, PHIL 407, PHIL 423, PHIL 433 and PL SC 460m but none of these courses cover the same material, or approach it in the same manner. Upon completion of this course, the student will gain an appreciation of the differences between 'cyberspace' and the 'real' world. The student will also understand that the implementation and modern information technologies has significant social and policy implications that demand appropriate policy issues in several different contexts (global, national, local). The student will also be able to discuss the major themes in information policy studies (e.g., community, privacy, access, economic participation, security) and be able to relate these themes to the applications of particular technologies. They will be able to describe policy frameworks and issues, as well as the ethical and social implications of these choices. Homework assignments; Socratic dialogue; analysis and write-up of case studies; assessment of group research projects and presentations; participation in on-line discussion groups; two mid-term and one final examination (objective and essay). The precise mix of evaluation components will be determined by individual instructors; a typical weighting might be exams (60%), written assignments and papers (20%), and collaborative projects (20%). IST 431 will be offered every semester at University Park. At every other campus location where the Baccalaureate degree program is offered, the course will be offered 1-2 times annually depending on demand. Student enrollment at University Park will begin at approximately 50-75 in the first year and grow to 200 over a 3-4 year time period. At other locations, enrollment should range from 25-50 annually.

Enforced Prerequisite at Enrollment: IST 210 and IST 220

Changes Effective Summer 2026:

- Changed Prerequisites

IST 489: Research Methods for the Information Sciences and Technology (3 Credits) [H]

Old Listing Effective Through Spring 2026:

Seminar course focused on approaches to studying information and communication technologies and writing theses and other research reports.

IST 489H Research Methods for the Information Sciences and Technology (3) IST 489H provides students the opportunity to learn and experience: 1) Conceptualizing what are information and communications technologies. 2) Approaches to conducting research on, and reporting results of studies, of ICT. 3) The research process and its academic context. The course is designed around a series of ill-structured, contemporary, problems that require students to develop responses by applying research approaches to ICT. At the end of the course, students will be able to: 1) Apply different conceptualizations of ICT to common problems. 2) Select and initiate research on ICT. 3) Begin writing research-oriented work such as theses and papers.

Enforced Prerequisite at Enrollment: IST 110

Changes Effective Summer 2026:

- Changed Course Description
- Removed Prerequisites
- Removed Honors Attribute

LARCH 499A: Design Theory Seminar (1 Credit) [IL]**Old Listing Effective Through Spring 2026:**

Inquiry-based reading and discussion of design theory literature relevant to the focus and content of the associated design studio course, LARCH 499B. LARCH majors only.

Changes Effective Summer 2026:

- Removed Prerequisites

LARCH 499B: Design and Theory VI: Contemporary/International Landscape Architectural Design Issues (5 Credits) [IL]**Old Listing Effective Through Spring 2026:**

Study of and design for sites, programs, and social groups associated with ongoing contemporary landscape architectural concerns. LARCH majors only.

PreRequisite: LARCH312 , LARCH361W; Concurrent: LARCH499A, LARCH499C , LARCH499D

Changes Effective Summer 2026:

- Removed Prerequisites
- Removed Concurrents

LARCH 499D: Contemporary/International Special Topics (3 Credits) [IL]**Old Listing Effective Through Spring 2026:**

Special topics related to, and study in conjunction with 499B. Landscape Architecture majors only.

Changes Effective Summer 2026:

- Removed Prerequisites
- Removed Concurrents

LHR 409: Leadership Development: A Life-Long Learning Perspective (3 Credits) [BA]**Old Listing Effective Through Spring 2026:**

The course examines the continuing influence of social and environmental factors in shaping leadership and leadership development. LHR (OLEAD) 409 Leadership Development: A Life-Long Learning Perspective (3)(BA) This course meets the Bachelor of Arts degree requirements. Current social conditions, such as financial crises, ineffective solutions to local, national, and international problems and corrupt leaders, call for more effective and ethical leadership on a broad scale. The positive and moral transformation of social institutions requires active participation and leadership of more authentic transformational leaders. This course will discuss authentic transformational leadership development from a life span developmental perspective. More specifically, it will focus on how an individual develops his/her leadership skills, potential, and capacity in his/her childhood, school, social organizations, colleges, and work organizations. The primary purpose of this course is to help students understand how family, educational, and other environmental factors have helped and/or will help them develop their transformational leadership potential and leadership effectiveness, in addition to gaining a better understanding

of their strengths and weaknesses in respect to personality, individual difference, motivation, values, emotions, self-awareness, and identity. The fundamental objectives of this course are to help students 1) increase self-awareness; 2) to help students to know more about their sense of self, including self-identity, self-awareness, self-efficacy, and other types of self-concepts; 3) to understand the effect of life span influences in an individual's leadership development.

Prerequisite: OLEAD 100 or 5th Semester Standing

Cross-listed Courses: OLEAD 409

Changes Effective Summer 2026:

- Changed Prerequisites

LHR 468: American Labor Unions (3 Credits)**Old Listing Effective Through Spring 2026:**

This course will explore the current state of American labor unions and the historical, cultural, legal, political, and economic contexts within which they operate. In addition, we will examine alternative organizational forms through which U.S. workers organize including cooperatives, worker centers, living wage campaigns, and digital platforms. Among the subjects that students will analyze are the US public's perception of unions, the recent increase in political resistance to US public employee unions, the relationship between rising inequality and declining U.S. labor union membership, shifting union attitudes toward immigrant workers, the impact of globalization on U.S. unions, and how U.S. unions compare to those in other parts of the world. We will also analyze how divisions of class, gender, race, sexuality, and nationality shape the U.S. labor movement today. Finally, we will discuss pressing contemporary issues such as the rise of the gig economy, 2019-2020 strike wave, the Janus v. AFSCME decision, and the impact of the COVID-19 pandemic on U.S. workers. Guest speakers, who are union practitioners, will provide students with the opportunity to question elected union officers and staff and will provide real world context to the course readings. This course will give students a fundamental understanding of how U.S. unions are structured and operate, and how those unions both impact and are impacted by the U.S. and global economies.

Prerequisites: 4th semester standing

Changes Effective Summer 2026:

- Changed Prerequisites

MGMT 400: Organization Development (3 Credits)**Old Listing Effective Through Spring 2026:**

A study of organizational change and methodologies related with change and improvement. Examination of planned change on processes, strategies, people and culture in organizations.

Enforced Prerequisite at Enrollment: MGMT 301

Changes Effective Summer 2026:

- Changed Course Description

MIS 336: Database Management Systems (3 Credits)**Old Listing Effective Through Spring 2026:**

Theory and utilization of database management systems in organizations, including data modeling and applications development.

Enforced Prerequisite at Enrollment: MIS 204 or MIS 110 or CMPSC 121 or CMPSC 102

Changes Effective Summer 2026:

- Changed Prerequisites

MIS 441: Business Intelligence for Decision Making

Old Listing Effective Through Spring 2026:

Application of Information Technology based methods and tools to analyze business data and support decision making.

MIS 441 Business Intelligence for Decision Making (3) Business intelligence encompasses the IT tools for exploring, analyzing, integrating, and reporting business data for fact-based, intelligent decision making. This course primarily investigates methods and tools for exploring and analyzing large amounts of business data also called "Big Data." Learning methods emphasize active learning in the application of methods and tools to real data and the presentation of the results. Students will be exposed to a variety of methods for analyzing both structured and unstructured data and they will work with business data sets to understand the value that can be extracted from large data sets. They will also learn how to classify and associate data to discover business rules that can be used to support decision making. The course will also cover methods to analyze social media information and about tools that can facilitate such analysis and discovery. Again they will get a chance to work with data from real social networks to gain an appreciation of how value can be obtained from such networks. Finally, they will learn about techniques for visualizing, presenting and communicating information in a useful way, e.g. through dashboards and with other technologies on various platforms.

Enforced Prerequisite at Enrollment: MIS 431

Changes Effective Summer 2026:

- Changed Course Title
- Changed Abbreviated Title
- Changed Course Description
- Removed Prerequisites
- Added Concurrents

NUTR 320: Science and Methods of Food Preparation (4 Credits)

Old Listing Effective Through Spring 2026:

The purpose of this course is to teach students the science of food preparation, to develop culinary skills, to learn how to preserve the nutritional content of plant and animal foods, and how to apply food safety principles during food preparation. Additionally, for each food preparation method, students will learn the underlying chemical and physical principles responsible for the recipe outcome and apply these principles in the cooking lab. Students will gain an understanding of production methods used by food manufacturers and the source of food additives used to make processed foods. Students will apply scientific principles of food preparation by modifying recipes to improve the nutritional quality of prepared foods while maintaining product quality. During the lab sessions, students will learn basic culinary techniques and apply these techniques by reading recipes, preparing foods, and using sensory evaluation to analyze the prepared foods.

Enforced Prerequisites at Enrollment: (NUTR 251 and CHEM 202) or (NUTR 251 and CHEM 210)

Changes Effective Summer 2026:

- Changed Course Description
- Changed Prerequisites
- Added Recommended Preparation

PLET 205: Introduction to Plastics (3 Credits)

Old Listing Effective Through Spring 2026:

Introduction to the plastics industry including fundamental aspects of plastic materials and processing; introduces the chemical influence on mechanical and flow properties of plastic materials.

PLET 205 Introduction to Plastics (3) Introduction to the plastics industry including fundamental aspects of plastic materials and processing; introduces the chemical influence on mechanical and flow properties of plastic materials.

Enforced Prerequisite at Enrollment: (MATH 081 and MATH 041) or MATH 140 OR Prerequisite or concurrent: CHEM 110

Changes Effective Summer 2026:

- Removed Prerequisites

PLET 484: Medical Manufacturing Methods (3 Credits)

Old Listing Effective Through Spring 2026:

This course provides instruction in the methods and practices used in the manufacturing of plastic devices in the medical industry.

PLET 484 Medical Manufacturing Methods (3) This course provides instruction in the methods and practices used in the manufacturing of plastic devices in the medical industry. The course includes both manufacturing and regulatory requirements. A large portion of the class will involve a simulated process validation exercise. The concepts will be introduced in lecture, parts will be manufactured and measured in the processing lab, and data analysis will be completed in a computer lab. Injection molding will be emphasized as the major plastic part production method, but other processes will be used as needed. Clean room requirements, sterilization and material handling, and common assembly methods will also be covered.

Enforced Prerequisite at Enrollment: PLET 380

Changes Effective Summer 2026:

- Changed Prerequisites

PNG 406: Rock and Fluid Laboratory (1 Credit)

Old Listing Effective Through Spring 2026:

Systematic study of oil reservoir rocks and fluids; their interrelation applied to petroleum engineering.

Enforced Prerequisite at Enrollment: PHYS 211 Enforced Concurrent at Enrollment: PNG 405

Changes Effective Summer 2026:

- Changed Course Description
- Removed Prerequisites
- Changed Concurrents

PNG 410: Reservoir Engineering (3 Credits)

Old Listing Effective Through Spring 2026:

The broad course objectives are to introduce and implement techniques for analysis and prediction of reservoir performance by use of material balance and steady and non-steady state flow equations. Some specific objectives are:

To introduce students to concept of material balance in oil and gas reservoirs.

To learn to identify primary drive mechanisms in oil and gas reservoirs.

To recognize important differences between production from conventional and unconventional shale reservoirs.

To understand and apply concepts in single-phase transient flow in reservoirs.

The course will commence with a discussion of rock and fluid properties including the properties of unconventional shale reservoirs and then move on to the analysis of the performance of dry gas reservoirs. After talking about the behavior of dry gas reservoirs with water influx, the topic of performance of gas condensate reservoirs will be discussed. Various schemes for analyzing the performance of gas condensate reservoirs using data from the field as well as based on laboratory experiments will be presented. This will be followed by a detailed exposition of material balance analysis of undersaturated oil reservoirs. Combination drives including water influx and gas cap expansion will be discussed. Laboratory analysis of pressure-volume-temperature relationships of saturated oils will be discussed. Prior to introducing models for water influx into reservoirs, essential concepts from the dynamics of fluid flow in reservoirs will be presented. This will enable students to better understand the concept of linear superposition that is essential to apply the water influx models.

Enforced Prerequisite at Enrollment: PNG 405 and PNG 406 Enforced Concurrent at Enrollment: EME 301 and EME 303

Changes Effective Summer 2026:

- Changed Course Title
- Changed Abbreviated Title
- Changed Course Description
- Changed Prerequisites
- Changed Concurrents

PNG 440W: Formation Evaluation (3 Credits) [WAC] Old Listing Effective Through Spring 2026:

Formation Evaluation covers the characterization of oil and gas reservoir formations and methods for quantifying the volume of hydrocarbon resources therein. The course focuses on the petrophysical interpretation of wireline logs to meet these objectives, and also covers the operation and underlying physical principles of those tools. Topics covered include: the basic procedure of open hole logging, calculation of a geothermal gradient, understanding raster and digital well log files, quick look interpretation, reservoir volumetrics, understanding the physics of and cultivating the ability to interpret data from the traditional logging suite (gamma ray, spontaneous potential, resistivity devices, density, neutron, and sonic logs), coring, wireline formation testing, nuclear magnetic resonance logging, and interpretation in unconventional reservoirs. Best practices and limitations of the various well log tools are also discussed. Students are expected to perform complex engineering calculations using raw field data gathered from these tools, both from raster and digital well log files. As a "writing across the curriculum" course, students develop their technical writing skills through homework assignments that present their analyses in written reports.

Enforced Concurrent at Enrollment: PNG 405 and PNG 406

Changes Effective Summer 2026:

- Changed Course Description
- Added Prerequisites
- Removed Concurrents

PNG 450: Drilling Engineering (3 Credits) Old Listing Effective Through Spring 2026:

PNG 450: Drilling Engineering covers the design and analysis of oil-field drilling operations and equipment. This course addresses a critical issue in petroleum and natural gas engineering: how to drill and complete oil and gas wells in a sound, economical, and environmentally safe manner. Drilling technology has advanced greatly since the first commercial oil well in the U.S. was drilled in northwest Pennsylvania in 1859. The true vertical depth of the well has grown from 69.5 feet from then to more than 15,000 ft, with the deepest at more than 40,000 feet, today. The horizontal length of a well has grown from theoretically zero to more than 10,000 feet, with the longest at 40,000 feet. The temperature and pressure of the formation that petroleum engineers need to drill through could easily reach 350 F and 20,000 psi or higher, and the formation and fracture gradient window becomes narrower, all making drilling and completion more challenging. In summary, it is becoming increasingly more challenging to drill wells. Thus, engineering design becomes more critical. The objectives of this course are to introduce the students to the science of drilling and completion. This includes learning the fundamentals of drilling fluids and drilling fluid design, and applying fluid mechanics and quantifying drilling hydraulics for complex fluid flow through drilling string and annular spaces. The course will also discuss the concepts and quantify the formation pressure and fracture pressure gradients for different methods of drilling. A key task for students will be to learn the methods for characterization, selection and optimization of casing design, and optimized bit design, and finally the course will discuss how to design directional and horizontal wells to optimize production and recovery from mature fields and unconventional resources, such as coalbed methane, shale gas, and tight oil in Pennsylvania. This course is a prerequisite for petroleum and natural gas engineering major courses. It is an elective course for majors such as chemical engineering, mechanical engineering, civil engineering, etc. The knowledge, methods, and practical skills in this course could also be used in various other industries including geothermal HVAC, ground water drilling, mineral exploration, and scientific research.

Enforced Prerequisite at Enrollment: (EME 303 or CE 360 or ME 320) and [EMCH 210 or (EMCH 211 and EMCH 213)]

Changes Effective Summer 2026:

- Changed Course Description
- Added Concurrents

PNG 451: Drilling Laboratory (1 Credit) Old Listing Effective Through Spring 2026:

PNG 451: Drilling Laboratory covers common practices in well-control procedures and measurement of drilling fluid properties. This course serves as the laboratory component for PNG 450. Students will apply the concepts and skills gained from lectures and discussions in PNG 450. The aim is for students to become familiar with drilling fluids and how to quantify the fluid properties analytically. Students will also receive practical experience with drilling equipment, and will practice solving practical well-control problems in the laboratory. Students in this course will gain experience using our state-of-the-art rig floor simulator

and drilling fluid and cement laboratory, which are equipped with the advanced facilities currently used in the oil and gas industry.

Enforced Prerequisite at Enrollment: (EME 303 or CE 360 or ME 320) and [EMCH 210 or (EMCH 211 and EMCH 213)] Enforced Concurrent at Enrollment: PNG 450

Changes Effective Summer 2026:

- Changed Course Description
- Removed Prerequisites

PNG 475: Production and Completions Engineering (3 Credits)
Old Listing Effective Through Spring 2026:

This course starts with the single phase flow in porous media and then followed with the multi-phase flow in porous media and pipes. Hence a basic understanding of the fluid flow and different flow regimes are required to follow the course. While discussing these issues in the class, students will learn the role of compressibility on fluid flow in the rock, understanding the concept of compressibility requires some background in strength of materials. Additionally, while discussing tubing and casing design requirements in the course, students need to check burst and collapse loads which cannot be done without any previous knowledge about stress analysis taught in Strength of Materials. Therefore, the instructor is expecting that students have basic understanding of fluid flow and stress concepts and based on this foundation, new concepts about multiphase flow and well construction will be taught. Similarly, textbooks in this subject are prepared by assuming that the reader has a basic knowledge in fluid mechanics and strength of materials.

Enforced Prerequisite at Enrollment: EMCH 210 and Enforced Concurrent at Enrollment: PNG 410

Changes Effective Summer 2026:

- Changed Course Description
- Changed Prerequisites
- Removed Concurrents

PNG 480: Surface Production Engineering (3 Credits)
Old Listing Effective Through Spring 2026:

Analysis and evaluation of surface production processes, fluid separation, storage, measurement, treating, custody transfer, transmission, disposal, corrosion, and other operations. PNG 480 Production Process Engineering (3) Surface production engineering involves the extraction of reservoir fluids, their treatment at the surface and movement to a commercial market via a common carrier. It is the primary objective of this course to provide the fundamentals of surface production operations and underlying operational principles and design criteria for equipment utilized in the surface handling of petroleum production fluids. Surface production facilities are described in detailed as systems in charge of the separation of the wellstream fluids into three single-phase components (oil, gas, water) and of their transport and processing into marketable products or their disposal in an environmentally acceptable manner. A detailed overview of hydrocarbon fluid behavior, analysis of hydrocarbon and water separation processes, analysis and design of surface transportation systems and flow assurance problems is provided along with a comprehensive look at the engineering aspects involved in surface production operations. Topics include purpose and description of onshore and offshore surface production facilities and the function of the equipment used in these processes, including wellheads and Christmas trees, gathering systems,

production manifolds, field processing of crude oil, field processing of natural gas, phase separation of gas, oil and water, water-in-crude oil emulsification, heater-treaters and dehydration of crude oil, natural gas dehydration, stock tank batteries and transportation. Discussion includes oil and gas quality checks, oil and gas metering, typical contractual hydrocarbon sales specifications, and typical specifications for produced waters and other by-products. Hydrocarbon fluid behavior topics includes an overview of hydrocarbon thermodynamics, hydrocarbon PVT behavior, thermodynamics of liquid and vapor separation, and fluid behavior prediction models including modern cubic equations of state. In the context of surface facility design, a process simulation or compositional simulation is implemented to predict how the components the make up the well fluids react to changes in pressure and temperature as they are processed through the facility through a succession of phase changes where liquids flash to vapor or vapors condense into liquid. Equipment design topics comprise design of 2-phase and 3-phase vertical and horizontal separators, derivation of design equations, design of crude and condensate stabilization trains, design and operation of glycol dehydrator towers, and flow assurance topics such as hydrate, corrosion, and wax prevention. The ultimate purpose of surface equipment design is to recommend the most suitable and cost-effective equipment type and size that meets the specified service and system condition, contractual obligations, and industrial health and safety and environmental regulations.

Enforced Prerequisite at Enrollment: EME 301 and EME 303

Changes Effective Summer 2026:

- Changed Course Description

PNG 482: Production Engineering Laboratory (3 Credits)
Old Listing Effective Through Spring 2026:

Measurement and analyses of the physical and chemical properties of hydrocarbon fluid systems in a production environment. PNG 482 Production Engineering Laboratory (1) The task of production engineers is to optimize the extraction, treatment and delivery rate of hydrocarbons. For this optimization to be realistic, quantitative values of some relevant parameters and properties that characterize the system should be known preferably by way of measurements. It is the primary objective of this laboratory course to give the student an understanding of the available measurement techniques; an opportunity to gain hands-on experience in carrying out the experiments as well as operating the apparatus and some practice in the art of technical report writing. The Production Engineering Laboratory has been designed to expose the student to the principles and procedures of production engineering for oil and gas analysis (physicochemical characterization and quality control) and the transport of fluids in pipes and conduits. The main objective is to familiarize students with the basic measurements that must be taken in production monitoring and control, as well as basic production engineering principles. It is also aimed to enhance the error analysis, critical evaluation and technical report writing skills of the student. Major pieces of equipment in this laboratory include: viscosimeters, oxygen bomb calorimeters, gas chromatograph, densitometers, centrifuges, dead weight testers, dew point testers, and a meter run setup. Laboratory experiences include, but are not limited to, the determination of density of clear organic substances and petroleum distillates that can be handled as liquids at test temperatures between 10 and 40 °C using digital density meters, the determination of the API gravity (or specific gravity) of crude oil, petroleum products normally handled as liquids (e.g. stabilized crude oil, stabilized gasoline, naphthane, kerosene, gas oils, lubricating oils, and non-waxy fuel oils) and alcohols using hydrometer

and pycnometer methods, the calibration of Bourdon type pressure gauges by means of a dead weight testers and constructing of calibration charts for gauges that are not adjustable, the determination of water and sediment in crude oils by means of the centrifuge procedure, the determination of the heat of combustion of organic substances ranging in volatility including oil samples with volatiles ranging from that of distillates to that of residuals, the measurement of viscosity of crude oil and liquid petroleum products by means of measuring the time for a volume of liquid to flow under gravity through a calibrated glass capillary viscosimeter, the determination of water vapor content of gases by measurement of the dew point temperature and the calculation there from of the water vapor content, and the determination of a gas flow rates in pipelines by means of orifice plates and axial full-flow turbine meters.

Enforced Prerequisite at Enrollment: EME 301 and EME 303. Enforced Concurrent at Enrollment: PNG 480

Changes Effective Summer 2026:

- Changed Course Description
- Removed Prerequisites
- Changed Concurrents

PNG 490: Petroleum and Natural Gas Engineering Capstone Design (3 Credits)

Old Listing Effective Through Spring 2026:

PNG 490 serves as the capstone design experience for Petroleum and Natural Gas Engineering majors. As such, students will integrate knowledge acquired in other PNG courses and apply it toward the design of a field development plan. Working in teams, students will start by characterizing the target reservoir or geologic formation using available field data. The student teams will then design the drilling and completion of wells in the target formation, while considering technical and economic constraints. The overall field development plan will consider a variety of factors, including (but not limited to): the timing of drilling wells, the forecasted production from these wells, acquisitions and divestitures, surface facilities, and environmental and societal impact assessments. Candidate plans will be compared based on financial metrics, such as rate of return and net present value. The semester-long capstone experience will culminate in a final presentation and a final report.

Enforced Prerequisite at Enrollment: PNG 430 and PNG 440W and PNG 450 and EME 460

Changes Effective Summer 2026:

- Changed Prerequisites

PNG 494: Thesis (1-6 Credits: Maximum of 6 Credits)

Old Listing Effective Through Spring 2026:

A problem in petroleum engineering involving review of the literature and experimental data obtained in the field or laboratory.

Changes Effective Summer 2026:

- Changed Course Description

PNG 494H: Thesis (1-6 Credits: Maximum of 6 Credits)

Old Listing Effective Through Spring 2026:

A problem in petroleum engineering involving review of the literature and experimental data obtained in the field or laboratory.

Changes Effective Summer 2026:

- Changed Course Description

PNG 496: Independent Studies (1-18 Credits: Maximum of 18 Credits)

Old Listing Effective Through Spring 2026:

Creative projects, including research and design, that are supervised on an individual basis and that fall outside the scope of of formal courses.

Changes Effective Summer 2026:

- Changed Course Description

RUS 83: First-Year Seminar in Russian (3 Credits) [BA] [IL] [FYS] [GH]

Old Listing Effective Through Spring 2026:

Russia's cultural past and present. RUS 083 First-Year Seminar in Russian (3) (GH; FYS; IL) (BA) Russia, the world's largest country stretching over eleven time zones in Europe and Asia, is currently undergoing a dramatic transformation. For the past hundred years, Russia has served as a laboratory of gigantic dimensions as various social ideals were implemented with unprecedented radicalism. At the same time, Russia's intellectuals raised 'ultimate questions' about social justice, the existence of God, and the meaning of human life with an unparalleled acuity and intensity. This course surveys Russia's cultural past and present and introduces students to the various attitudes of Russian thinkers and authors toward the questions of national identity and national destiny. It could be offered either as a broad overview of general trends and key ideas or as a theme-specific survey. With that said, while the thematic focus may vary from year to year, students will discuss examples of Russian high culture (philosophy, literature, art, music) alongside critical inquiries into daily life in imperial, communist, and post-communist Russia in each iteration of the course. Special emphasis will be placed on the in-depth study of a few seminal works of Russian literature and cinema. In addition to introducing students to the key topics in Russian history and culture, this course will help to prepare them for a variety of additional courses in the fields of literature and Russian/East European area studies. In addition to the academic topic and issues of this course, students can expect to gain a general introduction to the University as an academic community and to have the opportunity to explore their responsibilities as members of that community. Students will develop an understanding of the learning tools and resources available to them, including the opportunity to develop relationships with faculty and other students who share their academic interests.

The course will be taught in English, and no prior knowledge of Russian culture and history is required. Each section of this course will be limited to twenty students who will be instructed by an experienced professor. The classwork will consist of a fusion of lectures, seminar-style discussions, group work, short writing assignments, collaborative group projects, student presentations, and a research project. This course can be used to fulfill the General Education or Bachelor of Arts Humanities requirement, the International Cultures requirement, and the first-year seminar requirement.

Changes Effective Summer 2026:

- Changed Course Description

RUS 402: Advanced Russian II (3 Credits) [BA]**Old Listing Effective Through Spring 2026:**

Advanced practicum in reading, writing, and conversation. RUS 402 (IL) builds on and expands the language competence acquired in Russian 200 and 401 and is taught entirely in Russian to ensure complete immersion. Students will work with a variety of texts and audio-visual materials on topics of general interest. Upon successful completion of the course, students will acquire basic competence in representing points of view other than their own, defending an argument, and hypothesizing on a more abstract level. The course also aims to increase the students' understanding of Russian culture and the Russian way of life.

Prerequisite: RUS 401; or Permission of program

Changes Effective Summer 2026:

- Changed Course Description

RUS 403: Advanced Russian Conversation and Composition (3 Credits) [BA] [IL]**Old Listing Effective Through Spring 2026:**

Advanced practicum in conversation and composition. RUS 403 (BA) (IL) includes situational topics and complex academic discourse and is designed to enhance students' oral, listening comprehension, and writing skills in Russian. It is taught entirely in Russian to ensure complete immersion. Students will work with authentic Russian texts and audio-video materials of moderate complexity in various genres and will actively engage in conversations and discussions on a number of topics of personal, community, national, or international interest: current events, culture, history, the arts, and politics. They will gain sufficient control of basic structures and generic vocabulary to be understood by native speakers of the language, including those unaccustomed to nonnative speech. Upon successful completion of the course, students will acquire basic competence in representing points of view other than their own, defending an argument, and hypothesizing on a more abstract level. The course also aims to increase the students' understanding of Russian culture and the Russian way of life.

Prerequisite: RUS 200 or permission of program; Concurrent: RUS 400, RUS 401, RUS 402, RUS 405, RUS 412

Changes Effective Summer 2026:

- Changed Course Description
- Changed Prerequisites
- Changed Concurrents
- Removed International Cultures (IL) Attribute

RUS 405: Seminar in Russian Literature (3-6 Credits: Maximum of 6 Credits) [IL]**Old Listing Effective Through Spring 2026:**

Readings in classical Russian literature; Topics vary. RUS 405 Seminar in Russian Literature (3 per semester/maximum of 6) (IL) In no other culture has literature attained the centrality it enjoyed in nineteenth- and twentieth-century Russia. Political, social and historical constraints propelled Russian writers into figures of witness, prophecy and moral instruction. Yet far from being limited to the vast, dark novels of legend, Russian literature offers a great deal of variety, including much humor, lyricism and fantasy. Russian 405 is a senior-level seminar devoted to the in-depth study of selected texts of classical nineteenth- and twentieth-century Russian literature. It presupposes a solid reading

knowledge of Russian. The choice of authors and texts will vary from one year to the next. Writers discussed on a regular basis will include such major figures as Alexander Pushkin, Mikhail Lermontov, Nikolai Gogol, Ivan Turgenev, Fyodor Dostoevsky, Lev Tolstoy, Anton Chekhov, as well as selected writers from the Soviet and post-Soviet period. The thematic emphasis will vary from one year to the next. The focus may be on the oeuvre of a single writer, on the development of a particular genre (e.g., lyric poetry or the short story), on a particular time period (e.g., the so-called "Silver Age" at the beginning of the twentieth century), or a particular theme (e.g., the conflict between liberalism vs. radicalism, the "woman question," the role of religion, Russia vs. the West, Russian "Orientalism," the Communist Revolution and its discontents, etc.). The literary texts will be read in Russian. They will be analyzed both in their socio-historical context and as aesthetically compelling manifestations of verbal art. Explorative analytical writing and class discussion will be essential means to explore the subject matter.

Prerequisites: RUS 401 or Permission of program

Changes Effective Summer 2026:

- Changed Course Description

RUS 406: Russian Film (3 Credits) [IL]**Old Listing Effective Through Spring 2026:**

Conversation and Composition based on classical Russian films. RUS 406 Russian Film (3) (IL) Taught in Russian, this course offers an overview of the development of the film industry in the USSR/Russia within its historical context: from the silent classics of the Soviet Golden Age, to the mass entertainment movies of Socialist Realism, the new-wave productions of the cultural thaw of the 60s, the popular genres of the 'stagnating' 70s, the liberated films of the glasnost period, and the most recent movies reflecting Russia's difficult economic transition. Russian cinema will be discussed as an index of sociopolitical trends over the years, as well as a medium in its own right. Therefore, attention will be devoted to historical turning points that affected the cultural policies of the Soviet Union, and consequently the styles, themes, and quality of filmmaking. At the same time, the course will consider the film as text, and analyze the feelings it stirs, the moods it evokes, and the ideological message it conveys. To this end, the course will cover the basic elements and techniques of film language (shots, montage, mise en scene, etc.) and the process of visual perception that affects the audience.

Prerequisite: RUS 401, RUS 402, or RUS 403

Changes Effective Summer 2026:

- Changed Course Description

RUS 420: Senior Seminar in Russian Culture (3 Credits) [BA] [IL]**Old Listing Effective Through Spring 2026:**

Senior seminar devoted to topics in Russian culture and conducted in Russian. Building on linguistic and cultural material covered in the second and third levels of study toward the Russian major, this course is designed to add depth and sophistication to the students' understanding of basic concepts in Russian culture and improve their ability to discuss and write about them in Russian. The course materials cover, selectively, the "big themes" and concepts of Russian culture, such as the legacy of Kievan Rus, the cultural/historical preconditions for the 'Third Rome' theory, the rift between the people and the upper classes following Peter the Great, Westernizers versus Slavophiles, the Bolshevik Revolution, the

Stalinist terror, WWII, the Thaw, Stagnation, Perestroika, and Putinism. Study materials include texts from a wide variety of genres and reflect a diversity of linguistic styles. They may incorporate passages from the ancient chronicles, folk legends, memoirs and autobiographies, as well as selections from historical and literary texts and films. Major artistic movements are considered in their connection to the respective historic period and their reception today. Students will also engage in brief weekly current events presentations. Frequent quizzes, participation in discussions, presentations, and research projects will be essential means to explore the subject matter and assess the students' progress. Students must complete RUS 100, RUS 401, and RUS 402 or RUS 403 prior to RUS 420 or receive permission of the program.

Prerequisites: RUS 100, RUS 401, RUS 402; RUS 403 Corequisites: 7th Semester standing or Permission of program

Changes Effective Summer 2026:

- Changed Course Description

SCIED 114: Sound and Light for Educators (4 Credits) Old Listing Effective Through Spring 2026:

Waves, sound, and light concepts highlighted by evidence-based explanations and scientific discourse in preparation for K-6 science teaching.

This course has two main focus areas: physics content typically addressed in elementary science curriculum and effective pedagogy for supporting children's meaningful science learning. An introduction to waves is used to construct an initial model, which is applied to sound phenomena and elaborated. The more robust model is then applied to understanding light phenomena and again elaborated. As the model develops across units of instruction, students are engaged in constructing explanations from evidence, model-based reasoning, and scientific discourse. Instructional approaches that are grounded in research on children's learning are used to engage education majors in their own learning, while teaching applications provide opportunities for them to unpack their experiences and apply them to school science teaching.

Cross-listed Courses: PHYS 114

Changes Effective Summer 2026:

- Changed Credits
- Removed PHYS 114 as Cross-listed Course

SOC 445: U.S. Immigration (3 Credits) Old Listing Effective Through Spring 2026:

This class examines theories of U.S. immigration and immigrant adaptation, effects of immigration, and policy.

SOC 445 U.S. Immigration (3) The United States has long been known as a nation of immigrants. People have come for all sorts of reasons, including economic opportunity, political asylum, and religious freedom. Immigration continues to be a fundamental source of demographic and social change today. However, the nature of the changes brought about by immigration will depend on the pathways immigrants and their descendants take as they incorporate into American society. This course is designed to introduce students to theories of immigration, patterns of immigrant incorporation, immigration's impact on the U.S., and political debates about immigration issues. Topic to be discussed include: -Why do immigrants come to the U.S.? -In what kinds of communities do immigrants live? -What is the economic impact of immigration on U.S.

society? -What is the social impact of immigration? -Are new immigrants assimilating? -What are the problems with current immigration policies and what are the alternative approaches to reform?

Enforced Prerequisite at Enrollment: 3 credits in SOC

Changes Effective Summer 2026:

- Added LTNST 445, PUBPL 445 as Cross-listed Courses

SPAN 269N: Theater and Performance (3 Credits) [BA] [IL] [GA] [GH] Old Listing Effective Through Spring 2026:

In Spanish Theatre and Performance, the students will read and analyze a variety of Spanish and Latin American plays from a literary perspective as well as from the perspective of a director, designer, and actor. We will use that analysis to create and perform monologues and scenes in Spanish. The students will learn acting, directing, and design skills and put those creative skills at service to further develop their ability to communicate effectively in the target language.

This is a course for oral communication through the use of acting. In this course, we will use acting techniques in order to improve our fluency in oral expression. There will be some grammar instruction that will flow through the scripts we encounter. This course will facilitate your ability to express yourself both professionally and personally. The class is conducted in Spanish. The students will use Creative Thinking in order to support the Key Literacy of developing a world language, particularly Spanish.

This course will examine plays from a variety of different countries. Play will be chosen from both Latin America and Spain, thereby introducing students to a variety of international cultures. We will be looking at these plays from a historical and social perspective, thereby examining the cultural values, traditions, beliefs, and customs of several countries and cultures.

We will look at plays ranging from the turn of the twentieth century through today and see how they and their contexts change through time. We will see how, for example, the plays of Lorca (Spain) might influence playwrights from other Spanish-speaking countries. (The second performance of "Bodas de sangre" was in Buenos Aires Argentina.)

Prerequisite: SPAN 253W

Changes Effective Summer 2026:

- Removed Prerequisites
- Added Recommended Preparation

SPAN 326: Reading the Borderlands: Geography and Identity Along the U.S.-Mexico Border (3 Credits) [US] [GH] Old Listing Effective Through Spring 2026:

This course examines representations of the U.S.-Mexico border in relation to the actual geographic space. SPAN 326 Reading the Border/Lands (3) (GH;US) This class will center on discussions of the U.S.-Mexico borderlands in cultural theory and practice. "Borderlands" is understood as a transcultural space filled with physical, cultural, economic, political, and mythical elements. The aim is to view how different artists from the Borderlands, both northern Mexican and Chicano, mediate their borderlands reality. That is to say, the goal of the class is to examine the different imaginative geographies in the borderlands. We examine a wide-ranging mix of cultural texts that includes prose, poetry, essays, and performance art, as well as film and video art. We explore how writers have historically rethought notions of citizenship, identity, and culture to create more fluid spaces of

representation in cultural contact zones. We will in particular, pay close attention to the relationship between national geography and the shaping of regional identities and popular cultures and relationships between the maps that nations draw and the cultural forms that cut across them.

Cross-listed Courses: LTNST 326

Changes Effective Summer 2026:

- Added Bachelor of Arts: Humanities and Bachelor of Arts: World Cultures Attributes
- Added International Cultures (IL) Attribute

SPAN 439: Don Quijote (3 Credits) [BA]

Old Listing Effective Through Spring 2026:

Thorough study of the masterpiece, including its sources, genesis, language, style, success, and influence.

Prerequisite: (SPAN 100A or SPAN 200) and SPAN 253W

Changes Effective Summer 2026:

- Changed Course Description
- Added International Cultures (IL) Attribute

SRA 231: Decision Theory and Analysis (3 Credits)

Old Listing Effective Through Spring 2026:

Provides an overview of decision theoretical and analytical concepts and tools in the security risk analysis field.

SRA 231 Decision Theory and Analysis (3) Decision Theory and Analysis is designed for students to build an understanding of how to improve the judgment and decision making of individuals, groups and organizations. Behavioral decision theories provide the theoretical core for the course. These theories draw on insights from a diverse set of disciplines, including cognitive and social psychology as well as economics, statistics and philosophy. Offered annually (and more if demand requires), this course will foster understanding of: (a) the cognitive, emotional, social and institutional factors that influence judgment and choice, (b) normative (economic) models of rational choice, and (c) how judgment and decision making can be predicted and/or improved through prescriptive aids and models. Applications of these theories and methods to real-life venues will be used to engage and focus the students. For example, insights on how such concepts apply to supply chain security, bioterrorism threats, legal decision making, large-scale risk assessments (e.g., assessing risks of transnational threat), and first-response/crisis decision making will be common. Where appropriate, real situations and cases are used to bring concepts and scenarios alive. Overall, the course emphasizes basic skills and concepts that enhance an individual's ability to understand why individuals, groups and organizations behave the way they do, how they formulate the issues and problems they confront, as well as to choose rationally among competing courses of action.

Enforced Prerequisite at Enrollment: SRA 211 and STAT 200

Changes Effective Summer 2026:

- Changed Prerequisites

UKR 100: Ukrainian Culture and Civilization (3 Credits) [IL] [GH]

Old Listing Effective Through Spring 2026:

Survey of Ukrainian culture and civilization from the Middle Ages to the present.

UKR 100 Ukrainian Culture and Civilization (3) (GH;IL) The course acquaints students with Ukrainian culture from the origins of Kyivan-Rus in the 9th Century to the present day. The course will examine the many facets that make up culture: history, politics, language, literature, folklore, religion, science, music, and art. The course will place Ukrainian culture in the broader context of the Slavic nations and peoples. It will focus on the development of national identity from the origins of the Ukrainian people through the colonial period under tsarist Russian domination, through Soviet domination, and finally to post-independence identity following the dissolution of the Soviet Union in 1991. The course will include films and expert guest lectures. The course format will consist of lectures, slide, video and audio presentations. Readings will all be in English. Questions and discussion on class lectures and readings and on topical matters will be strongly encouraged. At the end of the course, students will be familiar with the problems that post-colonial Ukraine faces at present. They will have a basic general knowledge of Ukrainian history and geography, and will be acquainted with representative achievements of Ukrainian high and folk culture. There will be a mid-term (30%), a final exam (30%), and a research paper (30%). The latter will be graded both for content and writing ability. Ten percent of the class grade will be for class participation, including attendance and active participation in discussions. Students may also receive extra credit by making a 10-15 minute oral presentation in class on a pre-approved topic, which will offer students the opportunity to practice public speaking. The exams will include written identification questions, brief essay questions, and a longer essay question that synthesizes knowledge acquired in class. As a General Education course, Ukrainian 100 incorporates the following four elements of active learning: international competence (a much lesser known part of the East European world), information gathering and analysis, active use of writing, and dialogue pertaining to social behavior, community and scholarly conduct. The case of Ukraine as a 'submerged nation,' subsumed under tsarist Russia and the Soviet Union, will provide students with a colonial paradigm of development of a minority culture and language under a politically stronger colonizing culture. Students need to write a 10-page paper for the course and will learn to explore library and internet resources. The paper will be graded for content, clarity, structure, and effective use of language. As an extra-credit option, students may volunteer to give a class presentation on their research topic or another topic of interest. Students may also acquire extra-credit by writing reaction papers on topical extracurricular lectures or visits to Ukrainian cultural sites (like the Ukrainian Museum in New York, the Ukrainian Embassy in Washington, DC, or historic Byzantine Rite Ukrainian churches). Ukrainian 100 is not required for the B.A. degree in Russian, but may be used under the rubric of 'Additional Courses' for the B.S. degree in Russian Translation. UKR 100 may be used to satisfy the Gen Ed Humanities and United States Cultures and International Cultures requirements.

Changes Effective Summer 2026:

- Changed Course Description

WWNDS 284: Saxophone: Performance IV (3 Credits)

Old Listing Effective Through Spring 2026:

Individual instruction in saxophone one hour per week. For B.M. and B.M.A. saxophone performance majors.

Changes Effective Summer 2026:

- Changed Credits

Course Changes: Effective Fall 2026

BA 420: Preparation for Career Management (1 Credit)

Old Listing Effective Through Summer 2026:

This course emphasizes effective career planning by closely examining oneself, the business world, communication styles and strategies. B A 420 Preparation for Career Management (1) BA 420 develops students' career preparation and management skills through the close examination of self, the world of work and communication styles and strategies. This course is one of a series in the program which collectively develop the skills and competencies necessary for the business administration student. The course is designed on the belief that (1) career decision-making is greatly enhanced by considering personal traits such as one's interests, values, goals, and approach to making decisions; and (2) through the exploration of self and world through out-of-classroom learning experiences. The student becomes empowered to apply prior classroom learning outside of the academic environment. These skills are utilized throughout a person's career. Students who successfully complete the course will be able to: -Prepare resumes targeted to a range of industries and positions. -Write effectively to prospective employers. -Identify personal traits and qualities in the context of career management. -Demonstrate effective interview techniques.

Enforced Prerequisite at Enrollment: BA 321 or BA 322

Changes Effective Fall 2026:

- Removed Prerequisites
- Added Concurrents

CAS 203H: Interpersonal Communication (3 Credits) [H] [GS]

Old Listing Effective Through Summer 2026:

N/A

Changes Effective Fall 2026:

- Added Course Description

CI 280: Introduction to Teaching English Language Learners (3 Credits) [GH]

Old Listing Effective Through Summer 2026:

Introduction to language, culture, instruction, assessment, and professionalism as they relate to teaching English Language Learners in U.S. schools. C I 280 Introduction to Teaching English Language Learners (3) (GH) C I 280 focuses on the development of foundational knowledge to successfully assist English language learners in U.S. school contexts. The basic premise of the course is that teachers play an important role in creating a positive classroom learning environment and bringing school success for English language learners. This course is designed to develop essential dispositions, skills, and knowledge for teacher education students to fulfill their important role. Course objectives are to understand culture, language, learning contexts, and pedagogy. Culture focuses on a) sociocultural characteristics of English language learners, b) how English language learners' cultural communication and learning styles affect the learning process, c) how English language learners' cultural values affect their academic achievement and language development, d) negative effect of cultural bias in instruction, materials and assessments, and e) the importance of developing cross-cultural competence in interactions with colleagues, administrators, school and community specialists, students and their families.

Changes Effective Fall 2026:

- Changed Course Title
- Changed Abbreviated Title
- Changed Course Description

FR 351: French and Francophone Literature I (3 Credits) [BA] [IL]

Old Listing Effective Through Summer 2026:

This course presents a survey of selected works of French and francophone literature from the Middle Ages to 1789. It aims to familiarize students with major literary works of this time period through close textual reading and analysis. Taught in French, it also aims to help students develop an appreciation for a wide variety of styles, genres, themes, literary movements, and historical contexts. It also serves to develop students' written and oral language skills. This course is designed as a complement to the French and francophone culture sequence.

PreRequisite: FR 201 , FR 202

Changes Effective Fall 2026:

- Changed Course Title
- Changed Abbreviated Title
- Changed Course Description
- Removed Bachelor of Arts: World Language (12th Unit) Attribute

FRNSC 415W: Laboratory in Crime Scene Investigation (2 Credits) (WAC)

Old Listing Effective Through Summer 2026:

Laboratory course covering crime scene investigation with emphasis on scientific philosophy, concepts, procedures, problem solving, and hands-on activities.

Changes Effective Fall 2026:

- Changed Course Number to 415
- Changed Course Description
- Added Prerequisites
- Removed Writing Across the Curriculum (WAC) Attribute

GD 400: Time and Sequence (4 Credits)

Old Listing Effective Through Summer 2026:

Motion design is a very complex and time consuming field. With practice, as with everything, one will but not without practice. This course creates an environment where they will get regular intensive practice along with additional tips and support. Designing and building more complex pieces in this course to emphasis in storytelling, narrative development and pitching motion projects professionally. Cinema 4D Is being reviewed and considered as an option for students that would like to pursue a 3-D animation career as well.

Enforced Prerequisite at Enrollment: C or better in GD 307

Changes Effective Fall 2026:

- Changed Course Description
- Changed Prerequisites

LARCH 424: Design Theory Seminar (3 Credits: Maximum of 9 Credits)

Old Listing Effective Through Summer 2026:

Inquiry-based reading and discussion of design theory literature relevant to contemporary landscape architecture issues. Topics vary each semester.

LARCH 424 Design Theory Seminar (1-3) LARCH 424, Design Theory Seminar, is a companion to the depth studios, LARCH 414. However, unlike the seminars offered during second and third years, LARCH 424 is not tied topically to any particular depth studio. Instead, this seminar provides a vehicle for rigorous and structured exploration of the theoretical and philosophical issues that face landscape architectural designers and planners. The seminar is a small group setting where directed readings, independent research and reflection are employed to explore the context of contemporary design. These seminars, offered to fourth- and fifth-year students, enable professors and students to take their investigations to greater depth. Seminars are offered by different professors each semester and the content is expected to be somewhat aligned with the faculty member's research and scholarship or pursues special landscape architectural topical content of the faculty's choosing. Students select seminars from the range of options offered. This allows students to select a topic of interest to explore with great intensity and detail. Students are required to take up to three seminars to achieve a minimum of three credits. Topics are related to issues that have been introduced in previous studios and seminars and the department ensures that students have access to the widest range of topics. The seminar alternatives offered each year are based on faculty expertise and student interest, and are chosen by the department head's review of faculty proposals. Seminar topics related to our research centers include historic preservation, urban ecology, community planning and watershed stewardship. From time to time topics independent of our research centers, such as the impact of technology on design or the impact of public policy on design and planning, will be addressed. The type of seminar outcome is determined by instructors on an individual basis, and will be rigorous and require a high level of depth of thought and a sophisticated product. Course Objectives: • To further develop an in-depth understanding of the theoretical or socio-political context for one or another aspect of landscape architecture. • To challenge students to articulate their own values in the context of a specific environmental concern. • To examine the means by which designers reconcile their own, their clients', and society's values in the pursuit of particular design or planning goals.

Enforced Prerequisite at Enrollment: Students must earn a C or better in LARCH 365W

Changes Effective Fall 2026:

- Changed Course Description
- Removed Prerequisites

MICRB 412: Medical Microbiology (3 Credits)

Old Listing Effective Through Summer 2026:

Characteristics, methods of identification, and pathogenesis of bacteria that cause human disease; principles of disease dynamics and control.

Enforced Prerequisite at Enrollment: MICRB 201 or MICRB 201H

Changes Effective Fall 2026:

- Changed Course Description

MUSIC 420: Song Writing and Recording (3 Credits)

Old Listing Effective Through Summer 2026:

Song composition, arranging and recording in a variety of style genres. MUSIC 420 Song Writing and Recording (3) This course will take the student through the process of composing and producing a recorded song. The class will consist of a combination of class meetings and individual instruction. Topics will include form, lyric writing, arranging, audio/MIDI recording and sequencing. Familiarity with basic audio sequencing software and music theory concepts is essential. The focus of the class is vernacular song as opposed to classical art song, but all the basic concepts discussed in the class apply to either genre. The course requires the composition of original songs and the creation of high-quality recordings of them and their conversion to MP3 format. The student are expected to enter the class with a basic knowledge of digital audio and MIDI (MUSIC/INART 258 or equivalent).

Enforced Prerequisite at Enrollment: INART 258A or INART 258B

Changes Effective Fall 2026:

- Removed Prerequisites

MUSIC 450: Teaching Marching Band (2 Credits) [BA]

Old Listing Effective Through Summer 2026:

Traditional and contemporary drill design principles, show development strategies, instructional techniques, and organizational procedures involved in teaching marching band.

MUSIC 450 Teaching Marching Band (2)(BA) This course meets the Bachelor of Arts degree requirements.

MUSIC 450 is a marching band technique course for music education majors, band directors, and experienced marching band members. This course develops knowledge and skills required to organize and teach marching band with an emphasis on traditional and contemporary drill design and charting. Students are taught an eclectic understanding of drill systems, contemporary drill design, and visual design theory with opportunities to apply drill design computer software (Pyware Java 3D) in developing effective movements for marching units. Course topics include philosophy and role of marching band in the music program, historical perspectives, marching band styles, administration and organization of the marching band and auxiliary units and teaching techniques.

Enforced Prerequisite at Enrollment: MUSIC 345 or permission of program

Changes Effective Fall 2026:

- Changed Course Description
- Removed Prerequisites
- Added Concurrents

OLEAD 496: Independent Study (1-18 Credits)

Old Listing Effective Through Summer 2026:

Creative projects, including research and design, which are supervised on an individual basis and which fall outside the scope of formal courses.

PreRequisite: OLEAD100

Changes Effective Fall 2026:

- Changed Prerequisites

PHIL 2: Individuals in Society (3 Credits) [BA] [GH] **Old Listing Effective Through Summer 2026:**

This course provides a philosophical introduction to pressing social and political issues. We will ask, for example, what justifies having a government; whether inequality is ever justified; what obligations citizens have toward each other and toward non-citizens; what exactly is wrong with racism, sexism, and other injustices and what we should do about them; the limits and benefits of privacy; and the role of families, schools, churches, clubs, and employers in public life. We study prominent philosophers and theorists on these questions, and address recent events or policies. Students will develop an appreciation for thinking about values in the context of conflicting political visions, and the analytical and expository skills for examining and discussing them.

Changes Effective Fall 2026:

- Changed Course Title
- Changed Abbreviated Title

PHIL 136N: Art and Philosophy in Ancient Greece (3 Credits) [GA] [GH] **Old Listing Effective Through Summer 2026:**

Ancient Greece provided Western Civilization much in terms of art and philosophy. The influence of the Greeks can be seen in such areas as architecture, sculpture, concepts of beauty, literature, etc. These are independent domains, but there is often integration between the two disciplines. This course will uncover the ways in which philosophy informed Greek ideals and the role played by both visual art and literary art. To that end, sections will focus on each of those two disciplines. Study will also display how the disciplines come together in the following areas: 1) Beauty and 2) The interrelation of art, religion, philosophy and the state.

Early in the course, students will thoroughly examine the concept of Beauty, with an emphasis on Ideal Beauty. Students will explore objective and subjective definitions by developing models of each and then synthesizing competing ideas in their own unconventional definitions of Beauty. Foundational work will include study of specific Greek artists/thinkers, and involve students in working toward identifying traces of early thinking in contemporary society. This will include both written and visual work. Analyses will target philosophical thought, sculpture and architecture primarily from Early Classical and High Classical/Golden Age works as students explore the Greek search for perfection. The periods and styles that will be covered include: Geometric which includes the Orientalizing period; Archaic; Classical (Early, High, and Late); and Hellenistic.

Next students will examine and discuss different philosophical topics such as metaphysics, epistemology, aesthetics, etc. An emphasis will be placed on Plato and Aristotle but the Pre-Socratics may also be considered. Art and philosophy are also integrated in Ancient Greece. Plato considered beauty, art, the artist and tragedy in works such as *The Republic*, *Philebus*, *Ion* and *Hippias Major*. Aristotle's major contribution to aesthetics is in the *Poetics*.

The last section will consider the relationship between literary art (plays) and the Greek understanding of authority, particularly the gods, the state and the individual. Much of the art in the Greek culture (as it is in most cultures) is best understood in terms of the dominant religion. The themes developed gave rise to a great deal of philosophical reflection in terms of the place of religion, and how the individual saw themselves in relation to the gods and the state. Through an examination of plays

and philosophical texts, students will explore this relation between the individual and an authority (gods or rulers).

Changes Effective Fall 2026:

- Added CAMS 136N as Cross-listed Course
- Changed Course Description
- Added Bachelor of Arts: Arts Attribute
- Added Bachelor of Arts: Humanities Attribute
- Added International Cultures (IL) Attribute

PNG 420: Applied Reservoir Analysis and Secondary Recovery (3 Credits) **Old Listing Effective Through Summer 2026:**

P N G 420 Applied Reservoir Analysis and Secondary Recovery (3) This course addresses two major issues in petroleum engineering: water influx and water flooding. The displacement of oil or gas by water is a complicated physical process that has a great impact on recovery efficiencies. The first objective of the course is to merge the material balance method and transient flow solutions for the aquifer into one analysis tool for understanding and predicting water influx cases. Several analytical and numerical methods are presented including: linear and radial diffusion equation solutions, super position, Hurst simplified, Schilthuis and Hurst modified. The second objective of the course is to understand the fundamentals of displacement theory and practice. The extension of the Buckley and Leverett water flooding theory is presented for three-phase flow. Three-phase relative permeabilities are determined from experimental data. Several geometrical patterns are discussed in the course including: five spots, staggered line drive, direct line drive, four spots, seven spots, and nine spots. The efficiency of each pattern is determined. Strategies for selecting a pattern for special cases are presented. The behavior of each pattern with time, including oil recover, is an integral part of the course. The students use our computational facility throughout the course. They write material balance models and use large reservoir simulators for studying water influx cases.

Enforced Prerequisite at Enrollment: [MATH 251 or (MATH 250 and MATH 252)] and PNG 410 and (CMPSC 200 or CMPSC 201)

Changes Effective Fall 2026:

- Changed Course Description
- Changed Prerequisites

PNG 430: Reservoir Modeling (3 Credits) **Old Listing Effective Through Summer 2026:**

PNG 430 is a senior-level undergraduate class where the student explores the fundamentals of hydrocarbon reservoir simulation as the area of reservoir engineering in which computer power becomes essential for predicting complex processes and fluid behavior involved in fluid transport in porous media. In this class, numerical models are built on the basis of finite-difference and finite-volume approximations of governing equations of fluid flow in porous media, which integrate conservation of mass, isothermal fluid PVT behavior, and Darcy's flow approximations. Topics include the use of Taylor Series, volume integrals, grid types, treatment of external (reservoir limit) and internal (wellbore) boundary conditions, generalized transmissibility calculations, matrix solution methods and solution of systems of simultaneous algebraic equations, treatment of space and time-derivatives, explicit and implicit schemes, stability analysis, and applications to single-phase (incompressible, slightly-compressible and compressible fluid) numerical

simulation. More advanced topics such as black-oil multiphase modeling and compositional modeling are introduced, including multiphase transmissibility calculations and multiphase solution techniques such as IMPES (Implicit-Pressure, Explicit Saturation) and multivariate Newton-Raphson.

Enforced Prerequisite at Enrollment: [MATH 251 or (MATH 250 and MATH 252)] and PNG 410 and (CMPSC 200 or CMPSC 201)

Changes Effective Fall 2026:

- Changed Course Description
- Changed Prerequisites

SPAN 300: Advanced Grammar and Composition Through Reading (3 Credits) [BA]

Old Listing Effective Through Summer 2026:

Development of advanced grammar and composition skills through reading texts by native speakers and adapting their techniques for original compositions.

Prerequisite: SPAN 215 or SPAN 253W

Changes Effective Fall 2026:

- Changed Course Description

Program Changes

Accounting, B.S. (Business) (ACCTG_BS)

Effective Summer 2026:

- Revised Entrance to Major Requirements
- Changed General Education credits included in Requirements for the Major from 12 credits to 15 credits
- Changed Requirements for the Major from 76 credits to 79 credits
- Changed Additional Courses for the Major from 14 credits to 17 credits
- Added ENGL 15, ENGL 30H, ENGL 137/CAS 137H, ESL 15 to Additional Courses for the Major

Biological Engineering, Minor (BE_UMNR)

Effective Summer 2026:

- Added BE 404 to Additional Courses for the Minor
- Removed BE 304 from Additional Courses for the Minor

Biomedical Engineering Technology, A.ENG.T. (2BET_AENGT)

Effective Fall 2026:

- Program added to Greater Allegheny campus

Business Analytics and Information Systems, B.S. (MIS_BS)

Effective Summer 2026:

- Revised Entrance to Major Requirements
- Added ENGL 137H/CAS 137H to Additional Courses for the Major

Carbon Capture, Utilization, and Storage, Certificate (CCUS_UCT)

Effective Summer 2026:

- New certificate added

Computer Engineering, B.S. (Engineering) (CMPEN_BS)

Effective Summer 2026:

- Changed total credits required for degree completion from 128 credits to 127 credits
- Changed General Education credits included in Requirements for the Major from 27 credits to 24 credits
- Changed Requirements for the Major from 110 credits to 106-108 credits
- Changed Prescribed Courses for the Major from 72-73 credits to 58 credits
- Added CMPSC 150N, CMPSC 222, CMPSC 315, CMPSC 316 to Prescribed Courses for the Major
- Removed CMPSC 473, CMPEN 331, CMPSC 311, STAT 418/MATH 418, ENGL 202C, MATH 140, MATH 141, MATH 220, MATH 250 from Prescribed Courses for the Major
- Changed Additional Courses for the Major from 32 credits to 48-50 credits
- Added STAT 418/MATH 418, STAT 414, CMPEN 462, CAS 100C, CAS 100S, CAS 138T, ENGL 138T, CAS 137H, ENGL 137H, ESL 15, ENGL 202C, ENGL 202H, MATH 140, MATH 140H, MATH 141, MATH 141H, MATH 220, MATH 220H, MATH 250, MATH 251, MATH 251H to Additional Courses for the Major
- Removed ECON 14, ECON 102, ECON 104, CMPEN 471 from Additional Courses for the Major
- Removed Supporting Courses and Related Areas for the Major

Corporate Innovation and Entrepreneurship, B.S. (CIENT_BS)

Effective Summer 2026:

- Revised Entrance to Major Requirements

Creative Writing, B.F.A. (CWRIT_BFA)

Effective Fall 2026:

- Revised Program Description
- Changed total credits required for degree completion from 121 credits to 120 credits
- Changed Electives from 0 credits to 2 credits
- Changed Requirements for the Major from 76 credits to 73 credits
- Changed Prescribed Courses for the Major from 46 credits to 25 credits
- Added ENGL 209 to Prescribed Courses for the Major
- Changed ENGL 6 from 4-8 credits to 4 credits in Prescribed Courses for the Major
- Removed CMLIT 10, ENGL 100, ENGL 401W, ENGL 420, ENGL 433, ENGL 436, ENGL 437, ENGL 458 from Prescribed Courses for the Major
- Changed Additional Courses for the Major from 24 credits to 33 credits
- Added ENGL 401W, ENGL 482W, CAMS 45, CMLIT 10, ENGL 104, APLNG 210, ENGL 100, LING 100, ENGL 424 to Additional Courses for the Major
- Removed ENGL 420, ENGL 433, ENGL 436, ENGL 437, ENGL 458, ENGL 423 from Additional Courses for the Major
- Changed Supporting Courses and Related Areas for the Major from 6 credits to 15 credits
- Added 12 credits in literature and 3 credits in courses in professional writing to Supporting Courses and Related Areas for the Major
- Removed 6 credits from courses at the 200-level or above in CMLIT or ENGL from Supporting Courses and Related Areas

Creative Writing, Minor (CWRIT_UMNR)**Effective Summer 2026:**

- Removed ENGL 429/CMLIT 429 from Additional Courses

Digital Arts and Media Design, B.Des. (IDS_BDES)**Effective Summer 2026:**

- Changed Plan Code to DART_BDES
- Revised Program Description
- Changed Requirements for the Major from 82 credits to 78-84 credits
- Changed Electives from 0-3 credits to 0-5 credits
- Changed Prescribed Courses for the Major from 52 credits to 50-52 credits
- Changed DART 495 from 3 credits to 1-3 credits in Prescribed Courses for the Major
- Changed Additional Courses for the Major from 30 credits to 30-32 credits
- Changed Emphasis Area requirement from 19-21 credits to 18-20 credits
- Added DART 206, DART 214, DART 305, DART 312, DART 314, DART 315, DART 324, DART 403, DART 406, DART 410, DART 415 to Digital Art and Design Emphasis area in Additional Courses for the Major
- Added DART 213, DART 214, DART 303, DART 304, DART 312, DART 324, DART 325, DART 415 to Interactive Media and Games Emphasis area in Additional Courses for the Major
- Added DART 214, DART 312, ART 220, ART 223, PHOTO 202, DART 324, DART 334, DART 403, DART 415 to Animation and Time Based Media Emphasis area in Additional Courses for the Major
- Added DART 312, DART 324, DART 325, DART 334, DART 403, DART 413, DART 415, DART 493, DART 494 from additional course list in Additional Courses for the Major
- Removed ART 343 from additional course list in Additional Courses for the Major

Digital Multimedia Design, B.Des. (DIGMD_BDES)**Effective Summer 2026:**

- Changed Prescribed Courses for the Major from 27 credits to 30 credits
- Changed DMD 400 from 3 credits to 6 credits in Prescribed Courses for the Major
- Changed Additional Courses for the Major from 30 credits to 27 credits
- Added COMM 130, COMM 210, COMM 262 to Additional Courses for the Major

Electrical Engineering, B.S. (Capital) (EENG_BS)**Effective Summer 2026:**

- Revised Program Description
- Changed total requirements for degree completion from 134 credits to 129 credits
- Changed General Education credits included in Requirements for the Major from 24 credits to 27 credits
- Changed Requirements for the Major from 113-115 credits to 111-115 credits
- Changed Prescribed Courses for the Major from 93 credits to 80-83 credits
- Added CMPEN 372, EE 385 to Prescribed Courses for the Major

- Removed CMPEH 472, EE 485, EMCH 211, EDSGN 100S, MATH 230, MATH 250 from Prescribed Courses for the Major
- Changed MATH 220 from 2 credits to 2-3 credits in Prescribed Courses for the Major
- Changed EE 317 from 2 credits to 3 credits in Prescribed Courses for the Major
- Changed EE 405 from 1 credit to 1-3 credits in Prescribed Courses for the Major
- Added C or better requirement to EE 405 in Prescribed Courses for the Major
- Changed Additional Courses for the Major from 9-10 credits to 22-23 credits
- Added EDSGN 100, EDSGN 100S, MATH 230, MATH 231, MATH 232, MATH 250, MATH 251, CMPSC 131, EE 465, STAT 318, CAS 100A, CAS 100S to Additional Courses for the Major
- Removed STAT 200 from Additional Courses for the Major
- Changed Supporting Courses and Related Areas for the Major from 11-12 credits to 9 credits
- Added EE 410, EE 413, EE 416, EE 417, EE 421, EE 432, EE 434, EE 442, EE 453, EE 456, EE 458, EE 460, EE 480, EE 483, EE 488, EE 489, EE 497, BME 402, BME 403, CMPSC 436, PHYS 458, PHYS 462, SSET 495 to Supporting Courses and Related Areas for the Major

Electrical Engineering Technology, B.S. (Capital, Engineering) (EET_BS, EETEN_BS)**Effective Summer 2026:**

- Changed Electives from 5-18 credits to 4-18 credits
- Changed Requirements for the Major from 86-96 credits to 86-97 credits
- Changed Common Requirements for the Major from 60-70 credits to 60-71 credits
- Changed Prescribed Courses for the Major from 27 credits to 27-29 credits
- Changed EET 419 from 1 credit to 1-3 credits in Prescribed Courses for the Major
- Changed Additional Courses for the Major from 33-43 credits to 33-42 credits
- Added CMPEN 372, EET 385 to Additional Courses for the Major
- Removed CMPEH 472 from Additional Courses for the Major
- Removed CMPET 412, EET 478 from Additional Courses for the General Electrical Engineering Technology Option
- Removed EET 478 from Additional Courses for the Power and Automation Option

Electro-Mechanical Engineering Technology, B.S. (Engineering) (EMET_BS)**Effective Fall 2026:**

- Program added to Beaver campus

Elementary and Early Childhood Education, B.S. (CEAED_BS)**Effective Summer 2026:**

- Changed Prescribed Courses for the Major from 64 to 67 credits
- Added EDPSY 422 to Prescribed Courses for the Major
- Changed Supporting Courses and Related Areas for the Major from 27 to 24 credits

- Added LLED 260 to Literature selection in Supporting Courses and Related Areas for the Major
- Removed CMLIT 110 from Literature selection in Supporting Courses and Related Areas for the Major
- Removed HIST 153Y, HIST 452, HIST 477 from U.S. History selection in Supporting Courses and Related Areas for the Major
- Added BIOL 114, BIOL 115, BIOL 116, BIOL 224, BIOL 225W, BIOL 234, BIOL 235W, BIOL 236W, BIOL 244, BIOL 245W to Biological Science selection in Supporting Courses and Related Areas for the Major
- Added ASTRO 150, SCIED 116 to Earth Sciences selection in Supporting Courses and Related Areas for the Major
- Removed GEOG 110, GEOSC 2 from Earth Sciences selection in Supporting Courses and Related Areas for the Major
- Removed PHYS 114 from Physical Sciences selection in Supporting Courses and Related Areas for the Major
- Changed Educational selections in Supporting Courses and Related Areas for the Major from 9 credits to 6 credits
- Added CI 288, CI 388, CI 488, EDPSY 406, EDPSY 421, EDPSY 450, EDPSY 475, HDF5 258N, PSYCH 217N to Educational selections in Supporting Courses and Related Areas for the Major
- Removed EDTHP 441, LLED 467 from Educational selections in Supporting Courses and Related Areas for the Major

Film Production, B.A. (FILM_BA)

Effective Summer 2026:

- Revised Program Description
- Changed Electives from 18 credits to 15 credits
- Changed Requirements for the Major from 33 credits to 36 credits
- Changed Prescribed Courses for the Major from 15 credits to 24 credits
- Added COMM 205, COMM 337, COMM 338 to Prescribed Courses for the Major
- Changed Additional Courses for the Major from 18 credits to 12 credits
- Added COMM 433 to Additional Courses for the Major
- Removed COMM 337, COMM 338, COMM 339 from Additional Courses for the Major

Finance, B.S. (Business) (FIN_BS)

Effective Summer 2026:

- Revised Entrance to Major Requirements
- Revised Retention Requirements
- Added ENGL 137H/CAS 137H to Additional Courses for the Major

Finance, B.S. (Capital, Abington) (FINCE_BS, FNCE_BS)

Effective Summer 2026:

- Changed Prescribed Courses for the Major from 46 credits to 43 credits
- Removed ENGL 202D from Prescribed Courses for the Major
- Changed Additional Courses for the Major from 27 credits to 30 credits
- Added ENGL 202A, ENGL 202B, ENGL 202C, ENGL 202D, FIN 405, FIN 406, FIN 418, FIN 428, FIN 455, FIN 470, FIN 477, ECON 470, FIN 471 to Additional Courses for the Major
- Removed ACCTG 481 from Additional Courses for the Major

- Added HRM course subject to 9-credit 200-400 level business courses requirements in Supporting Courses and Related Areas for the Major

Forest Ecosystem Management, B.S. (FOREM_BS)

Effective Fall 2026:

- Changed name to Forest Ecosystems
- Revised Program Description
- Changed total requirements for degree completion with the Community and Urban Forest Management option from 123 credits to 120 credits
- Changed General Education credits included in Requirements for the Major from 21-24 credits to 27 credits
- Changed Electives from 2-11 credits to 3-8 credits
- Changed Requirements for the Major from 88-100 credits to 94-99 credits
- Changed Common Requirements for the Major from 33-34 credits to 32-33 credits
- Changed Prescribed Courses for the Major from 24 credits to 17 credits
- Added FOR 123N, FOR 204 to Prescribed Courses for the Major
- Removed CHEM 110, CHEM 111, FOR 421, FOR 200, FOR 266 from Prescribed Courses for the Major
- Changed Additional Courses for the Major from 9-10 credits to 15-16 credits
- Added CAS 138T/ENGL 138T, CAS 100, ENGL 15, ENGL 30H, ENGL 137H/CAS 137H to Additional Courses for the Major
- Changed Name of Forest Biology Option to Biodiversity and Conservation Option
- Changed Forest Biology Option from 57-58 credits to 62-63 credits
- Changed Prescribed Courses for the Forest Biology Option from 34 credits to 25 credits
- Added FOR 201N, FOR 431/WFS 431, FOR 445, WFS 430/FOR 430, WFS 465/FOR 465 to Prescribed Courses for the Forest Biology Option
- Removed WFS 209N, CHEM 202, FOR 204, FOR 409, FOR 410, FOR 430, FOR 450W, HORT 445, FOR 350 from Prescribed Courses for the Forest Biology Option
- Changed Additional Courses for the Forest Biology Option from 8-9 credits to 16-17
- Added CHEM 110, CHEM 130, FOR 450W, FOR 480, FOR 455, GEOG 363, SOILS 450, FOR 266, FOR 350, WFS 310, WFS 340 to Additional Courses for the Forest Biology Option
- Removed ENT 313, FOR 403, PPEM 318, HORT 445 from Additional Courses for the Forest Biology Option
- Changed Supporting Courses and Related Areas for the Forest Biology Option from 15 credits to 21 credits
- Changed Forest Management Option from 57-60 credits to 63-66 credits
- Changed Prescribed Courses for the Forest Management Option from 29 credits to 35 credits
- Added FOR 421, FOR 442, FOR 266 to Prescribed Courses for the Forest Management Option
- Removed FOR 204, WFS 209N from Prescribed Courses for the Forest Management Option
- Changed FOR 320 from 2 credits to 3 credits in Prescribed Courses for the Forest Management Option

- Added CHEM 110, CHEM 130, WFS 209N, FOR 445, MATH 22, MATH 26, MATH 41 to Additional Courses for the Forest Management Option
- Removed FOR 410, FOR 430/WFS 430, FOR 409, SOILS 102, ERM 448, FOR 439, FOR 475 from Additional Courses for the for the Forest Management Option
- Changed Name of Community and Urban Forest Management Option to Forests, Trees, and People Option
- Changed Community and Urban Forest Management Option from 62-66 credits to 63-66 credits
- Added CAS 404, FOR 320, FOR 403, FOR 421, FOR 440, SOILS 422, FOR 266 to Prescribed Courses for the Community and Urban Forest Management Option
- Removed ENT 313, ENT 314, GEOG 430, HORT 138, HORT 301, HORT 408, PLANT 217, PPEM 318, FOR 204 from Prescribed Courses for the Community and Urban Forest Management Option
- Changed Additional Courses for the Community and Urban Forest Management Option from 22-25 credits to 19-22
- Added CHEM 110, CHEM 130, EDPSY 14, EDTHP 115, AG 160, ANTH 45N, METEO 133N, PHIL 118, MATH 22, MATH 26, MATH 41 to Additional Courses for the Community and Urban Forest Management Option
- Removed ARCH 316, LARCH 60, LARCH 65, RPTM 435, RPTM 470, RPTM 320, FOR 409, SOILS 102, ERM 448, FOR 439, FOR 475, FOR 495, FOR 496 from Additional Courses for the Community and Urban Forest Management Option
- Changed Supporting Courses and Related Areas for the Forest Biology Option from 8-9 credits to 12 credits
- Changed Name of Watershed Management Option to Watershed Ecohydrology Option
- Changed Watershed Management Option from 55-59 credits to 64 credits
- Changed Prescribed Courses for the Watershed Management Option from 7 credits to 42 credits
- Added BIOL 110, CHEM 110, CHEM 111, CHEM 112, CHEM 113, FOR 475, MATH 141, PHYS 211, PHYS 213, SOILS 102, FOR 350, FOR 370, FOR 477, MATH 140 to Prescribed Courses for the Watershed Management Option
- Removed FOR 450W, FOR 471 from Prescribed Courses for the Watershed Management Option
- Changed Additional Courses for the Watershed Management Option from 9-11 credits to 10
- Added FOR 455, SOILS 450, FOR 496, SOILS 496, GEOSC 1, GEOSC 20, Writing-intensive (W) course offered in the College of Agricultural Sciences to Additional Courses for the Watershed Management Option
- Removed FOR 475, MATH 110, MATH 140, MATH 111, MATH 141, FOR 409, SOILS 102, ERM 448, FOR 439 from Additional Courses for the Watershed Management Option
- Changed Supporting Courses and Related Areas for the Watershed Management Option from 39-41 credits to 12 credits
- Added 12 credits from department list requirements to Supporting Courses and Related Areas for the Watershed Management Option
- Removed EBF 200, ECON 302, EGEE 211, ENVST 100, GEOG 20, GEOG 30N, GEOG 160, PLSC 1, PLSC 135, EARTH 100, EARTH 103, EARTH 111, GEOG 10, GEOG 110, GEOSC 1, GEOSC 10, GEOSC 40, METEO 3, METEO 122, MICRB 106, MICRB 201, PHYS 1, PHYS 150, PHYS 151, PHYS 211, PHYS 213, PHYS 250, PHYS 251, FOR 455, GEOG

362, GEOG 363, GEOG 364, SOILS 450, ASM 327, CED 201, CED 327, CED 429, CED 431W, CED 450, ERM 411, ERM 412, ERM 413W, FOR 410, FOR 440, GEOG 411W, GEOG 430, GEOG 431, SOILS 422, ASM 309, CE 360, CE 370, CE 371, ENVE 411, ENVE 415, ENVSE 408, ERM 435, ERM 447, ERM 450, GEOG 310, GEOG 311, GEOG 412W, GEOSC 412, GEOSC 413W, GEOSC 440, GEOSC 452, METEO 451, METEO 454, SOILS 405, WFS 422 from Supporting Courses and Related Areas for the Watershed Management Option

Foundations of Business, Certificate (FDOBUS_UCT)

Effective Summer 2026:

- Revised Program Description
- Changed total requirements for certification completion from 13 credits to 15 credits
- Added BA 100S, BA 100, LHR 100, MKTG 122N, MKTG 301, DA 101, MIS 204, MIS 250, SCM 200, STAT 200 to Required Courses
- Removed BA 243, BA 241, BA 242, ENGL 15, MIS 204 from Required Courses

Labor and Human Resources, B.A. (LHRBA_BA)

Effective Summer 2026:

- Changed total requirements for degree completion from 123 credits to 120 credits
- Changed General Education credits included in Requirements for the Major from 3-6 credits to 0-6 credits
- Changed Electives from 18-21 credits to 15-21 credits
- Changed Requirements for the Major from 39 credits to 36 credits
- Changed Additional Courses for the Major from 9 credits to 6 credits
- Removed ECON 14, ECON 102, ECON 104 from Additional Courses for the Major
- Added ECON 102, ECON 104, ECON 315, Any OLEAD Course to Supporting Courses and Related Areas for the Major
- Removed OLEAD 100, OLEAD 409, OLEAD 464, OLEAD 465 from Supporting Courses and Related Areas for the Major

Labor and Human Resources, B.S. (LHRBS_BS)

Effective Summer 2026:

- Changed total requirements for degree completion from 123 credits to 120 credits
- Changed General Education credits included in Requirements for the Major from 7-10 credits to 4-10 credits
- Changed Electives from 23-27 credits to 20-27 credits
- Changed Requirements for the Major from 61-62 credits to 58-59 credits
- Changed Common Requirements for the Major from 31 credits to 28 credits
- Changed Additional Courses for the Major from 13 credits to 10 credits
- Removed ECON 14, ECON 102, ECON 104 from Additional Courses for the Major
- Added ECON 102, ECON 104, ECON 315, Any OLEAD Course to Supporting Courses and Related Areas in the Human Resources Option
- Added ECON 102, ECON 104, ECON 315, Any OLEAD Course to Supporting Courses and Related Areas in the Labor and Employment Relations Option

Management, B.S. (Business) (MGMT_BS)**Effective Summer 2026:**

- Revised Entrance to Major Requirements

Marketing, B.S. (Business) (MKTG_BS)**Effective Summer 2026:**

- Revised Entrance to Major Requirements
- Added Retention Requirements
- Changed General Education credits included in Requirements for the Major from 12 credits to 15 credits
- Changed Requirements for the Major from 73 credits to 76 credits
- Changed Additional Courses for the Major from 17 credits to 20 credits
- Added ENGL 15, ENGL 30H, ENGL 137/CAS 137H, ESL 15 to Additional Courses for the Major

Marketing, B.S. (Capital) (MRKT_BS)**Effective Summer 2026:**

- Revised Entrance to Major Requirements
- Changed General Education credits included in Requirements for the Major from 12 credits to 18 credits
- Changed Electives from 8-9 credits to 6-9 credits
- Changed Requirements for the Major from 78-79 credits to 84-87 credits
- Changed Prescribed Courses for the Major from 43 credits to 36 credits
- Removed ACCTG 211, ENGL 202D from Prescribed Courses for the Major
- Changed Additional Courses for the Major from 23-24 credits to 36-39 credits
- Added ACCTG 211, ACCTG 201, ACCTG 202, CAS 100A, CAS 100B, CAS 100C, CAS 100S, ENGL 15, ENGL 15S, ENGL 30H, ENGL 30T, ESL 15, ENGL 202A, ENGL 202B, ENGL 202C, ENGL 202D, MKTG 310 to Additional Courses for the Major
- Added HRM to list of course subjects for 12 credits from 200-400 level business courses requirement in Supporting Courses and Related Areas

Music, B.M. (MUSBM_BM)**Effective Fall 2026:**

- Added MUSIC 409 to Additional Courses for the Major
- Removed MUSIC 422, MUSIC 461W, MUSIC 462W, MUSIC 463W, MUSIC 464W from Additional Courses for the Major
- Changed Composition Option from 41-45 credits to 44-45 credits
- Changed Prescribed Courses for the Composition Option from 28-30 credits to 30 credits
- Changed MUSIC 431 from 2-3 credits to 3 credits in Prescribed Courses for the Composition Option
- Changed MUSIC 433 from 2-3 credits to 3 credits in Prescribed Courses for the Composition Option
- Changed Additional Courses for the Composition Option from 12-14 credits to 13-14 credits
- Added MUSIC 401, MUSIC 439, MUSIC 454 to Additional Courses for the Composition Option
- Added MUSIC 409 to Additional Courses for the Keyboard Instruments Option

- Removed MUSIC 438 from Additional Courses for the Keyboard Instruments Option
- Added MUSIC 188, MUSIC 409 to Additional Courses for the Strings, Winds, Brass and Percussion Instruments Option
- Removed MUSIC 438 from Additional Courses for the Strings, Winds, Brass and Percussion Instruments Option
- Added MUSIC 409 to Additional Courses for the Voice Option
- Removed MUSIC 432, MUSIC 438 from Additional Courses for the Voice Option

Nursing, B.S.N. (NURS_BSN)**Effective Fall 2026:**

- Added NURS 450C to Prescribed Courses for the Second Degree Option
- Removed NURS 302, NURS 450B, NURS 495 from Prescribed Courses for the Second Degree Option

Nutritional Sciences, B.S. (NUTR_BS)**Effective Summer 2026:**

- Added new Integrated B.S. in Nutritional Sciences and M.S. in Nutritional Sciences
- Changed Electives from 0-1 credits to 0-3 credits
- Changed Requirements for the Major from 95-100 credits to 94-97 credits
- Changed Common Requirements for the Major from 26-27 credits to 23-24 credits
- Changed Additional Courses for the Major from 6-7 credits to 3-4 credits
- Removed NUTR 494, NUTR 494H, NUTR 495, NUTR 495B from Additional Courses for the Major
- Changed Health Sciences Option from 69-73 credits to 72-73 credits
- Changed Prescribed Courses for the Health Sciences Option from 3 credits to 6 credits
- Added NUTR 372 to Prescribed Courses for the Health Sciences Option
- Changed Additional Courses for the Health Sciences Option from 12-16 credits to 12-13 credits
- Added NUTR 494, NUTR 494H, NUTR 495, NUTR 495B, NUTR 496 to Additional Courses for the Health Sciences Option
- Removed NUTR 372, NUTR 445, NUTR 446 from Additional Courses for the Health Sciences Option

Portuguese, Minor (PORT_UMNR)**Effective Summer 2026:**

- Changed total credits required for the minor from 19 credits to 18-19 credits
- Changed Prerequisite Courses for the Minor from 7 credits to 3 credits
- Added PORT 200 to Prescribed Courses for the Minor
- Removed PORT 3, PORT 405 from Prescribed Courses for the Minor
- Changed Additional Courses for the Minor from 0 credits to 3-4 credits
- Added PORT 3, PORT 123 to Additional Courses for the Minor

Radiological Sciences, A.S. (2RSUC_AS)**Effective Fall 2026:**

- Program added to Greater Allegheny campus
- Program phased out at New Kensington campus

Real Estate, B.S. (REST_BS)

Effective Summer 2026:

- Revised Entrance to Major Requirements

Risk Management, B.S. (RM_BS)

Effective Summer 2026:

- Revised Entrance to Major Requirements
- Added Retention Requirements
- Changed General Education credits included in Requirements for the Major from 12 credits to 15 credits
- Changed Requirements for the Major from 73 credits to 76 credits
- Changed Common Requirements for the Major from 49 credits to 52 credits
- Changed Additional Courses for the Major from 8 credits to 11 credits
- Added ENGL 15, ENGL 30H, ENGL 137/CAS 137H, ESL 15 to Additional Courses for the Major
- Removed RM 425/BLAW 425, RM 480/IB 480 from Additional Courses for the Real Estate Option

Secondary Education, B.S. (Education, Behrend) (SECED_BS, SECBC_BS)

Effective Summer 2026:

- Changed total requirements for degree completion with the Social Studies Teaching from 129-132 credits to 132 credits
- Changed Requirements for the Major from 83-111 credits to 83-112 credits
- Added HDFS 239 to Prescribed Courses for the Major
- Removed PSYCH 100 from Prescribed Courses for the Major
- Added CI 492, EDPSY 422 to Additional Courses for the Major
- Removed PSYCH 412, HDFS 239 from Additional Courses for the Major
- Changed Biological Science Teaching Option from 63-66 credits to 63-67 credits
- Changed Prescribed Courses for the Biological Science Teaching Option from 30 credits to 18 credits
- Removed BIOL 110, BIOL 220W, BIOL 240W from Prescribed Courses for the Biological Science Teaching Option
- Changed Additional Courses for the Biological Science Teaching Option from 25-28 credits to 37-41 credits
- Added BIOL 110, BIOL 114, BIOL 115, BIOL 116, BIOL 220W, BIOL 224, BIOL 225W, BIOL 234, BIOL 235W, BIOL 240W, BIOL 244, BIOL 245W to Additional Courses for the Biological Science Teaching Option
- Changed Chemistry Teaching Option from 55-60 credits to 55-61 credits
- Changed Prescribed Courses for the Chemistry Teaching Option from 34 credits to 30 credits
- Removed BIOL 110 from Prescribed Courses for the Chemistry Teaching Option
- Changed Additional Courses for the Chemistry Teaching Option from 15-17 credits to 19-22 credits
- Added BIOL 110, BIOL 114, BIOL 115, BIOL 116 to Additional Courses for the Chemistry Teaching Option

- Changed Earth and Space Science Teaching Option from 60-63 credits to 60-64 credits
- Changed Prescribed Courses for the Earth and Space Science Teaching Option from 32 credits to 24 credits
- Removed BIOL 110, BIOL 220W from Prescribed Courses for the Earth and Space Science Teaching Option
- Changed Additional Courses for the Earth and Space Science Teaching Option from 20-23 credits to 28-32 credits
- Added BIOL 110, BIOL 114, BIOL 115, BIOL 116, BIOL 220W, BIOL 224, BIOL 225W to Additional Courses for the Earth and Space Science Teaching Option
- Changed Environmental Education Teaching Option from 55-58 credits to 52-56 credits
- Changed Prescribed Courses for the Environmental Education Teaching Option from 24 credits to 13 credits
- Removed BIOL 110, BIOL 220W, SCIED 457 from Prescribed Courses for the Environmental Education Teaching Option
- Changed Additional Courses for the Environmental Education Teaching Option from 7-8 credits to 15-17 credits
- Added BIOL 110, BIOL 114, BIOL 115, BIOL 116, BIOL 220W, BIOL 224, BIOL 225W, BIOL 244, BIOL 245W to Additional Courses for the Environmental Education Teaching Option
- Changed General Science Teaching Option from 38 credits to 38-39 credits
- Changed Prescribed Courses for the General Science Teaching Option from 22 credits to 18 credits
- Removed BIOL 110 from Prescribed Courses for the General Science Teaching Option
- Changed Additional Courses for the General Science Teaching Option from 16 credits to 20-21 credits
- Added BIOL 110, BIOL 114, BIOL 115, BIOL 116, BIOL 220W, BIOL 224, BIOL 225W, BIOL 234, BIOL 235W, BIOL 240W, BIOL 244, BIOL 245W to Additional Courses for the General Science Teaching Option
- Changed Mathematics Teaching Option from 57-59 credits to 54-56 credits
- Removed CMPSC 101, CMPSC 121 from Additional Courses for the Mathematics Teaching Option
- Changed Additional Courses for the Mathematics Teaching Option from 16 credits to 13 credits
- Changed Physics Teaching Option from 55-62 credits to 55-63 credits
- Changed Prescribed Courses for the Physics Teaching Option from 49-50 credits to 45-46 credits
- Removed BIOL 110 from Prescribed Courses for the Physics Teaching Option
- Changed Additional Courses for the Physics Teaching Option from 6-12 credits to 10-17 credits
- Added BIOL 110, BIOL 114, BIOL 115, BIOL 116 to Additional Courses for the Physics Teaching Option
- Added PSYCH 100 to Additional Courses for the Social Studies Teaching Option

Supply Chain and Information Systems, B.S. (SCIS_BS)

Effective Summer 2026:

- Revised Entrance to Major Requirements
- Changed General Education credits included in Requirements for the Major from 12 credits to 15 credits
- Changed Requirements for the Major from 73 credits to 76 credits

- Changed Additional Courses for the Major from 8 credits to 11 credits
- Added ENGL 15, ENGL 30H, ENGL 137/CAS 137H, ESL 15 to Additional Courses for the Major