

**PENN COLLEGE**  
**DUAL**   
**ENROLLMENT**

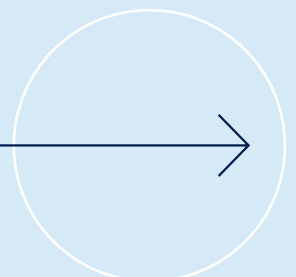
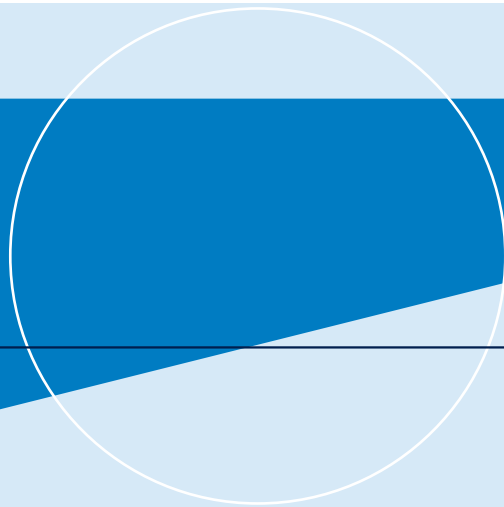
 **COMPREHENSIVE  
COURSE GUIDE**

**FUTURE MADE  
BY HAND**



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*This document provides information about all courses offered within Penn College Dual Enrollment. All courses are subject to availability and pending secondary teacher approval. New partners start with technical program courses for the first year, with the option to add general education courses in subsequent years.*

## ADVERTISING ART/GRAPHIC DESIGN

### **ART125: Art History: Ancient through 15th Century [VIRTUAL ONLY]**

Survey of art history emphasizing the study and recognition of the visual forms of art, especially painting, sculpture, and architecture. Includes the study of the function of design; techniques of execution; and the scientific, political, economic, social, and literary dimensions of the period. Covers the history of art from the ancient world up to and including the Renaissance.

3 Credits: 3 Hour Lecture

Enrollment requirement: (C) minimum overall GPA

### **ART135: Art History: 16th through 20th Centuries [VIRTUAL ONLY]**

Emphasis on the study and recognition of the visual forms of art, especially painting, sculpture, and architecture. Includes the study of the function of design; techniques of execution; and the scientific, political, economic, social, and literary dimensions of the period. The history of art from the 16th Century up to and including the 20th Century will be explored.

3 Credits: 3 Hour Lecture

Enrollment requirement: (C) minimum overall GPA

### **ART145: History of Graphic Design [VIRTUAL OPTION]**

Study of the history of graphic design and of the ways in which the past will help students better understand current and future design applications. Emphasis on research of different design movements, such as the Victorian and Art Nouveau Graphics, Postmodern Design, the Arts and Craft Movement, and the computer graphics revolution.

3 Credits: 3 Hour Lecture

Enrollment requirement: (C) minimum overall GPA

## AIR CONDITIONING & REFRIGERATION

### **ACR116: Introduction to Refrigeration**

Introduction to basic refrigeration systems. Topics include proper and safe use of tools, identification of materials, methods of assembling refrigeration systems, and proper handling of refrigerants. Emphasis on basic system components: evaporators, compressors, condensers, and test equipment.

5 Credits: 3 Hour Lecture, 6 Hour Lab

Enrollment requirement: (C) minimum overall GPA

## ARCHITECTURAL TECHNOLOGY

### **ACH135: Architectural Computer Aided Drafting**

Introduction and practical application of Computer-Aided Drafting (CAD) techniques and standards used to create two-dimensional architectural drawings. Focus on hardware and software components, operating systems, file management, CAD commands, system variables, drawing setup, creation of lines and shapes, and the editing, saving, and printing of drawings, and use of campus information technology resources. Advanced topics include external references, layouts, paper space, attributes, dimensioning, text, and the creation of a symbols library.

3 Credits: 2 Hour Lecture, 3 Hour Lab

Enrollment requirement: (C) minimum overall GPA

## AUTOMOTIVE

### **AMT109: Automotive Electrical Fundamentals**

Study of the electron theory of electricity. Topics include Ohm's law and Kirchhoff's law; AC and DC principles; series and parallel circuits; test meters; wiring diagrams; basic solid-state devices; circuit analysis; and the concepts of capacitance, inductance, and impedance. Overview of integrated circuits and on-board microcomputers.

3 Credits: 2 Hour Lecture, 3 Hour Lab

Corequisite(s): AMT127 (waiver available)

Enrollment requirement: (C) minimum overall GPA

### **AMT112: Brake Systems**

Fundamentals of brake hydraulics, including theory and operation of servo and non-servo drum brakes, disc and drum brake machining, operation of disc brakes, operation of power assist brakes, and overview of electronic anti-skid brakes.

3 Credits: 2 Hour Lecture, 3 Hour Lab

Enrollment requirement: (C) minimum overall GPA

### **AMT113: Steering and Suspension**

Principles of operation of steering and suspension, rack and pinion steering gears, and conventional steering gears. Study includes the theory of operation of power steering gears, steering geometry, wheel alignment principles, and static and dynamic wheel balancing.

3 Credits: 2 Hour Lecture, 3 Hour Lab

Enrollment requirement: (C) minimum overall GPA

## BIOLOGY

### **BIO103: Human Anatomy and Physiology Survey \*\***

Overview of human anatomy and physiology designed for non-science majors. Emphasis on the relationships between the structures and functions in each body system as well as the interrelationships among all body systems in the maintenance of homeostasis. Laboratory work complements and reinforces lecture materials.

4 Credits: 3 Hour Lecture, 3 Hour Lab

Corequisite(s): ENL111 (waiver available)

Enrollment requirement: (C) minimum overall GPA and (C) minimum overall Algebra I final grade

## BUILDING CONSTRUCTION

### **BCT103: Construction Hand & Power Tools**

Survey of hand and power tools typically used to perform construction work. Emphasis on the development of skills needed to effectively perform layout, measurement, cutting, fastening, and finishing operations. Study also includes maintenance of tools and equipment, safe use of hand and power tools, and emerging tool technology.

1 Credit: 0 Hour Lecture, 3 Hour Lab

Sophomore-approved course

Enrollment requirement: (C) minimum overall GPA

### **BCT109: Framing Principles**

Theory and application of framing techniques in residential and light commercial construction. Emphasis on basic principles and skills used in hand and machine woodworking operations.

4 Credits: 2 Hour Lecture, 6 Hour Lab

Corequisite(s): BCT103 and BCT104 (waiver available for BCT104, not available for BCT103)

Enrollment requirement: (C) minimum overall GPA

### **BCT234: Masonry Principles**

Introduction to masonry construction materials and methods, with an emphasis on the terms, definitions, and methods of construction practices related to concrete block, brick construction, and thin masonry veneer. Topics also include the different types of mortar mixes and their strengths and uses, reinforcement of masonry walls, masonry cleaning, weather protection for masonry, and estimating supplies and materials.

5 Credits: 2 Hour Lecture, 9 Hour Lab

Prerequisite(s): BCT103 and BCT104 (waiver available for BCT104, not available for BCT103).

Enrollment requirement: (C) minimum overall GPA

## BUSINESS

### **BIM120: Social Media in Business and Society [VIRTUAL OPTION]**

Examination of the strategic use of social media for personal, professional, and business communication, advertising, and marketing. Coursework includes using various social media tools, creating and sharing content, and collaborating on group campaigns using social media for social change. Includes analysis of current and emerging social media tools from a personal and business perspective.

3 Credits: 3 Hour Lecture

Enrollment requirement: (C) minimum overall GPA

### **MGT105: Introduction to Business [VIRTUAL OPTION]**

Introduction to a variety of business concepts and practices that impact all organizations, as well as the knowledge and skills needed to be successful in an organization. Topics include interpersonal communications, emotional intelligence, economics, accounting, finance and investments. An integrative approach connects topics and provides context within organizational environments, relevance to current business situations, and advances across various fields of business.

3 Credits: 3 Hour Lecture

Sophomore-approved course

Enrollment requirement: (C) minimum overall GPA

## CHEMISTRY

### **CHM100: Fundamentals of Chemistry \*\***

Basic principles of chemistry and its practice in the laboratory. Emphasis on the underlying structure of matter (atoms, ions, molecules) and how structure determines properties. Designed to teach chemistry terminology and symbols, as well as to develop analytical and critical thinking skills. Appropriate for non-science majors needing one term of chemistry or to satisfy a lab science requirement. Also appropriate for those who desire background before taking General Chemistry I (CHM111). No prior knowledge of chemistry is assumed, but some algebra skills are needed.

4 Credits: 3 Hour Lecture, 3 Hour Lab

Sophomore-approved course

Enrollment requirement: (C) minimum overall GPA and (C) minimum overall Algebra I final grade

\*\* General Education Courses

## COLLISION REPAIR (AUTO BODY)

### **ABC100: Introduction to Non-Structural Collision Repair**

Analysis of basic principles and industry best practices, including issues of human and environmental safety. Theory/overview of removing, repairing, replacing, and adjusting outer body panels; straightening and roughing out of damaged steel panels and preparing them for body filler; and repairing aluminum panels. Study of proper replacement of corrosion protection to the repaired panels and adjustment of panels for proper fit. Introductory theory of cutting and welding of steel.

2 Credits: 2 Hour Lecture

Corequisite(s): ABC104 (waiver not available)

Enrollment requirement: (C) minimum overall GPA

### **ABC104: Introduction to Non-Structural Collision Repair Applications**

Application of theory, techniques, principles, and industry best practices, including issues of human and environmental safety. Applied skills include removing, repairing, replacing, and adjusting outer body panels; straightening and roughing out damaged steel panels and preparing them for body filler; repairing aluminum panels for proper replacement of corrosion protection; and adjusting panels for proper fit.

3 Credits: 0 Hour Lecture, 9 Hour Lab

Corequisite(s): ABC100 (waiver not available)

Enrollment requirement: (C) minimum overall GPA

## COMPUTER-AIDED DRAFTING

### **CAD120: AutoCAD – Comprehensive**

Comprehensive application of 2D and 3D techniques using AutoCAD® software. Topics include the generation, editing, and analysis of geometry in alignment with industry standards with an emphasis on productivity.

3 Credits: 2 Hour Lecture, 3 Hour Lab

Enrollment requirement: (C) minimum overall GPA

### **CAD122: 3D Parametric Modeling Using Autodesk Inventor®**

Study and application of solid and surface modeling using Autodesk Inventor® parametric modeling software. Topics include the generation and editing of mechanical parts and assemblies, analysis of mass properties, rendering and animation, and the development of physical models using rapid prototyping (additive manufacturing) equipment. Also included are basic 3D-to-2D documentation techniques.

3 Credits: 2 Hour Lecture, 3 Hour Lab

Sophomore-approved course

Enrollment requirement: (C) minimum overall GPA

### **CCD103: Technical Drawing I**

Basic principles and skills of drafting as a graphic using the parametric modeling approach. Topics include technical sketching, SolidWorks® CAD operations and procedures, shape description, geometric construction, multiview projection, sectional views, auxiliary views, revolutions, threads and fasteners, and application of dimensions and tolerancing. Other topics include detail views, part drawings, assembly drawings, manufacturing processes, surface finishing, descriptive geometry, and the use of vendor part catalogs. ANSI/ASME drawing standards and practices are emphasized.

4 Credits: 3 Hour Lecture, 3 Hour Lab

Corequisite(s): CCD104 (waiver not available)

Enrollment requirement: (C) minimum overall GPA

### **CCD104: Detailing I**

Technical drawing procedures using SolidWorks® CAD operations in compliance with the ANSI standards to develop finished drawings. Drawing assignments involve technical sketching, shape description, geometric construction, multiview projection, sectional views, auxiliary views, revolutions, threads and fasteners, application of dimensions and tolerancing, detail views, part drawings, and assembly drawings. Other topics will include manufacturing processes, surface finishing, descriptive geometry, and acquiring and using vendor part catalogs. ANSI/ASME drawing standards and practices are emphasized.

3 Credits: 0 Hour Lecture, 9 Hour Lab

Corequisite(s): CCD103 (waiver not available)

Enrollment requirement: (C) minimum overall GPA

## COMPUTER TECHNOLOGY

### **BWM150: Introduction to Web Page Development**

Introductory coverage of the Internet and online Web technologies. Skills learned include how to plan, create, and maintain static Web pages.

3 Credits: 3 Hour Lecture

Enrollment requirement: (C) minimum overall GPA and (C) minimum overall Algebra I final grade

### **CIT160: Introduction to Programming [VIRTUAL OPTION]**

Introduction to problem-solving techniques, elementary programming, and the application of these techniques in developing structured programs. A current high-level language is used to illustrate the implementation phase of program development.

3 Credits: 3 Hour Lecture

Enrollment requirement: (C) minimum overall GPA and full Penn College math placement test, level 4

### **CIT180: Introduction to Database**

Introduction to creating and using simple relational databases. Topics include basic terminology, database tools, data security, design concepts, query functions, and importing/exporting data. A selected database application is used to illustrate the database concepts.

3 Credits: 3 Lecture

Enrollment requirement: (C) minimum overall GPA and full Penn College math placement test, level 4

### **CSC132: Introduction to Gaming and Simulation**

Introductory topics include historical elements, genres, goals, players, story and world development, production process and roles. Study provides overall view of the game play experience and how that is implemented with various design components. Practical hands-on application includes using a simple game design environment to design and implement simple games.

3 Credits: 3 Hour Lecture

Enrollment requirement: (C) minimum overall GPA.

### **EET145: Networking I [VIRTUAL OPTION]**

Fundamental concepts of operation, installation, and configuration of the hardware and operating system software for computer networks. Emphasis on the hands-on, practical experiences needed to service enterprise computing systems used in industry. Network topologies, protocols, cabling systems, and server operating system software installation and service configuration are covered, with an emphasis on entry-level skills for network professionals.

4 Credits: 3 Hour Lecture, 3 Hour Lab

Enrollment requirement: (C) minimum overall GPA and full Penn College math placement test, level 3

## CULINARY ARTS/HOSPITALITY

### **FHD101: Foundations of Professional Cooking**

Introduction to professional food preparation skills and kitchen organizational practices through theory and performance-based learning lab activities. Theory relates manual skills to basic production techniques. Principles of classic cooking methods, heat transfer, knife skills, ingredient identification, sensory analysis, and industry professionalism are emphasized. As needed.

3 Credits: 1 Lecture, 6 Lab

Enrollment requirement: (C) minimum overall GPA

### **FHD137: Introductory Baking**

Fundamental principles and procedures used to prepare a variety of bakery products and desserts. A study of ingredients and mixing methods for producing various baked goods.

3 Credits: 1 Hour Lecture, 6 Hour Lab

Corequisite(s): FHD118 (waiver not available)

Enrollment requirement: (C) minimum overall GPA

## DIESEL

### DSM119: Fuel Systems

Basic introduction to the theory and operation of mechanical and electronic fuel injection systems as they apply to the heavy-duty diesel engine field, with a focus on operation, maintenance, troubleshooting and repair, and safety.

2 Credits: 2 Hour Lecture

Sophomore-approved course

Enrollment requirement: (C) minimum overall GPA

### DSM141: Heavy Duty Brake Systems

Explanation and theory of brake systems common to heavy duty vehicles and equipment. Selected topics include air, hydraulic, and anti-lock systems with emphasis on troubleshooting and practical applications of repair and maintenance.

2 Credits: 2 Hour Lecture

Sophomore-approved course

Corequisite(s): DSM142 or DSM155 (waiver available)

Enrollment requirement: (C) minimum overall GPA

## ELECTRICAL

### ELT116: Construction Lab I: Residential

Introduction to residential wiring, plans, specifications, and codes. Theory and lab assignments covering procedures for wiring basic lighting and receptacle circuits, installing special purpose circuits and switching circuits, and producing accurate wiring diagrams. Blueprint reading and the understanding and utilization of the National Electrical Code (NEC) are strongly emphasized in the course.

5 Credits: 3 Hour Lecture, 6 Hour Lab

Sophomore-approved course

Corequisite(s): ELT111 (waiver available)

Enrollment requirement: (C) minimum overall GPA

### ELT119: Electrical Practices in Industry

Introduction to basic wiring, plans, specifications, electrical installation and troubleshooting. Theory and lab assignments will relate to electrical system installation and application focusing on NFPA79, UL508A, and NFPA70 standards. \*Mechatronics POS only

4 credits (3 lecture, 3 Lab)

Enrollment requirement: (C) minimum overall GPA and full Penn College math placement test, level 3

## ELECTRONICS/ENGINEERING TECHNOLOGY

### EET114: Introduction to Digital Electronics [VIRTUAL OPTION]

Study of basic digital logic devices and systems. Device Symbology, Boolean logic expressions, truth tables and timing diagrams will be examined. Combinational logic circuits and their applications will be analyzed.

3 Credits: 3 Hour Lecture

Corequisite(s): EET115 (waiver not available)

Enrollment requirement: (C) minimum overall GPA and full Penn College math placement test, level 3

### EET115: Digital Circuits Applications

Construction of prototype logic circuits. The measurement of static and dynamic electronic characteristics of devices and systems will be studied.

1 Credit: 3 Hour Lab

Corequisite(s): EET114 (waiver not available)

Enrollment requirement: (C) minimum overall GPA and full Penn College math placement test, level 3

### EET116: Electronic Circuits & Devices I

Introduction to the basic principles of electronics and common solid-state devices. Emphasis on basic electronic parameters such as current, voltage, resistance, inductance, and capacitance. Additional topics include series, parallel, and series/parallel circuits as well as discrete solid-state devices, including rectifying diodes, light emitting diodes, photodiodes, zener diodes, bipolar transistors, and thyristors.

5 Credits: 3 Hour Lecture, 6 Hour Lab

Enrollment requirement: (C) minimum overall GPA and full Penn College math placement test, level 3

### EET124: Engineering, Technology & Society [VIRTUAL OPTION]

Introduction to the basic concepts and applications of computer and engineering technologies and the effects on professional and casual users, their employers and employees, and society. Applied skills include the use of current computer technology for data/information collection and organization; visualization, analysis, and interpretation of numeric computations; and the dissemination and presentation of solutions to engineering technology problems.

3 Credits (2 Lecture–3 Lab)

Sophomore-approved course

Enrollment requirement: (C) minimum overall GPA

## EMERGENCY MANAGEMENT & HOMELAND SECURITY

### **BEM101: Introduction to Emergency Management Operations [VIRTUAL OPTION]**

Introduction to the theories, principles, and organized approaches to emergency management at local, state, and federal levels. Topics include the history of human vulnerability to natural, man-made, and technological hazards; the advent of emergency management professions; and an examination of current emergency response systems.

3 Credits: 3 Hour Lecture

Enrollment requirement: (C) minimum overall GPA

### **BEM103: The History & Evolution of Emergency Management**

Analysis of the history and evolution of emergency management in the United States. Topics trace events that have impacted and motivated change in approach to EM with analysis of the situations within its governing body.

3 Credits: 3 Hour Lecture

Enrollment requirement: (C) minimum overall GPA

## ENGLISH

### **ENL111: English Composition I \*\***

Fundamental writing and research skills with an emphasis on expository writing. Emphasis on analysis, discussion, and practice of writing that explores, explains, and argues. Coursework includes a significant research component.

3 Credits: 3 Hour Lecture

Senior-only course; No mixed classrooms

Enrollment requirement: (C) minimum overall GPA and Penn College Dual Enrollment English placement test, level 3

## HISTORY

### **HIS116 World History I \*\* [VIRTUAL OPTION]**

Study of the history of humanity from its beginnings to C.E. (Common Era) 1500. Equal emphasis on the political, economic, and social development of Western and non-Western civilizations.

3 Credits: 3 Hour Lecture

Sophomore-approved course

No mixed classrooms without AP equivalent course (AP World History)

Enrollment requirement: (B) minimum overall GPA

### **HIS126: World History II \*\* [VIRTUAL OPTION]**

Study of the history of humankind from A.D. 1500 to the present. Equal emphasis is placed on the political, economic, and social development of Western and non-Western societies.

3 Credits: 3 Hour Lecture

Sophomore-approved course

No mixed classrooms without AP equivalent course (AP World History)

Enrollment requirement: (B) minimum overall GPA

### **HIS136: United States Survey to 1877 \*\* [VIRTUAL OPTION]**

Political, economic, and social development of the United States from colonial times through the Civil War and Reconstruction Period.

3 Credits: 3 Hour Lecture

Sophomore-approved course

No mixed classrooms without AP equivalent course (AP United States History)

Enrollment requirement: (B) minimum overall GPA

### **HIS146: United States Survey from 1877 to the Present \*\* [VIRTUAL OPTION]**

Political, economic, and social development of the United States from 1877 up to and including the Civil Rights movement.

3 Credits: 3 Hour Lecture

Sophomore-approved course

No mixed classrooms without AP equivalent course (AP United States History)

Enrollment requirement: (B) minimum overall GPA

## HORTICULTURE

### **HRT101: Introduction to Ornamental Horticulture**

Overview of the diverse ornamental horticulture industry, including the worldwide scope and economic impact of the industry in today's marketplace. Emphasis on information access through the Internet, trade journals, trade organizations, the horticulture industry, guest speakers, and visitations to various horticultural businesses. Exploration includes products, services, and information used in the industry; production and marketing (wholesale and retail) of horticultural products and services; and traditional and nontraditional career paths within the industry.

1 Credit: 1 Hour Lecture

Enrollment requirement: (C) minimum overall GPA

## INDUSTRIAL DESIGN

### **BIX110: Introduction to Industrial Design**

Introduction to industrial design techniques, aesthetic concepts, and practical rendering skills. Integration of aesthetics, ergonomics, material selection, and safety principles into product design. Creative solutions to design problems using two- and three-dimensional renderings in sketches, clay models, and optional castings of designs.

3 Credits: 2 Hour Lecture, 3 Hour Lab

Enrollment requirement: (C) minimum overall GPA

## MACHINIST GENERAL & MACHINE TOOL TECHNOLOGY

### **MTT128: Mill Applications**

Introduction to the theory and practical applications of basic metalworking. Emphasis on mill applications, industrial shop safety, material selection, job planning, bench-work, quality control, and inspection. (Manual) Milling machines, hand tools, drill presses, pedestal grinders, band saws, and precision-measuring equipment are used to complete required projects.

4 Credits: 1 Hour Lecture, 9 Hour Lab

Enrollment requirement: (C) minimum overall GPA

### **MTT129: Lathe Applications**

Introduction to the theory and practical applications used to safely set up and operate metal turning engine lathes and conversational computer numerical control (CNC) tool room lathes. Operations such as turning, facing, boring, grooving, drilling, turning tapers, single-point threading, and performing cut-off procedures are implemented. Three- and four-jaw chucking techniques and turning between centers are used to complete required projects.

4 Credits: 1 Hour Lecture, 9 Hour Lab

Enrollment requirement: (C) minimum overall GPA

## MEDICAL TERMINOLOGY

### **MTR100: Medical Terminology Survey [VIRTUAL OPTION]**

Introduction to the basic structures and rules of interpreting medical terminology, designed to develop the ability to read, understand, and write the medical language.

1 Credit: 1 Hour Lecture

Sophomore-approved course

Enrollment requirement: (C) minimum overall GPA

### **MTR104: Basics of Medical Terminology [VIRTUAL OPTION]**

Foundation for the use of the language of medicine, with emphasis on correct pronunciation and spelling, various word parts, abbreviations and symbols, and terms pertaining to body systems. Etiology, symptomatology, pathology, and diagnostic procedures for identifying various disease processes provide an increased understanding of medically related conditions and procedures.

3 Credits: 3 Hour Lecture

Enrollment requirement: (C) minimum overall GPA

## POLYMER ENGINEERING TECHNOLOGIES

### **PPT116: Polymer Industries**

Overview of the polymer industry, including materials and processes. Topics include the many types of career opportunities in the industry, inviting individual interest-based exploration. Discussion also covers the nature of polymer product manufacturers, including size, work environment, and typical processes used.

2 Credits: 2 Hour Lecture

Sophomore-approved course

Enrollment requirement: (C) minimum overall GPA

### **PPT118: Polymer Processing Survey – Lecture**

Introduction to polymer processing techniques, including injection molding, extrusion, blow molding, rotational molding, and thermoforming.

3 Credits: 3 Hour Lecture

Enrollment requirement: (C) minimum overall GPA

## POLITICAL SCIENCE

### **PSC131: American Government – National\*\***

Federal government, its power, and organization. Functions of legislative, executive, and judicial branches. Students examine the historical development of our federal system and analyze the relationships between social forces, government, and political action.

3 Credits: 3 Hour Lecture

No mixed classrooms without AP equivalent course (AP United States Government and Politics)

Enrollment requirement: (B) minimum overall GPA

### **PSC141: State & Local Government \*\***

State and local government institutions, their functions and responsibilities; intergovernmental relations.

3 Credits: 3 Hour Lecture

No mixed classrooms

Enrollment requirement: (B) minimum overall GPA

## PSYCHOLOGY

### **PSY111: General Psychology \*\* [VIRTUAL OPTION]**

Introduction to the science of human behavior and mental processes. Students examine the relation between the nervous system and behavior, learning, perception, language, personality, intelligence, and psychopathology.

3 Credits: 3 Hour Lecture

No mixed classrooms without AP equivalent course (AP Psychology)

Enrollment requirement: (B) minimum overall GPA

## SOCIOLOGY

### **SOC111: Introduction to Sociology \*\* [VIRTUAL OPTION]**

Introduction to the theories, principles, concepts, and major research in sociology. Study includes society's impact on human behavior and consciousness as well as the ways in which individuals and groups affect cultures and their social structures. A comparison of different cultures and subcultures provides an understanding of the relativity and universality of social values, norms, and beliefs.

3 Credits: 3 Hour Lecture

No mixed classrooms

Enrollment requirement: (B) minimum overall GPA

## WELDING

### **WEL119: Shielded Metal Arc Welding**

Introduction to the principles and practices of basic Shielded Metal Arc Welding (SMAW) using various types of mild steel electrodes in multiple positions with emphasis on the flat and horizontal positions. Development of practical hands-on techniques with various power sources using alternate current (AC) and direct current (DC) polarity.

4 Credits: 1 Hour Lecture, 9 Hour Lab

Sophomore-approved course

Enrollment requirement: (C) minimum overall GPA

### **WEL133: Flux Cored Arc Welding**

Introduction to the principles and practices of Flux Cored Arc Welding (FCAW) using various types of mild steel electrodes in multiple positions. Development of practical hands-on techniques using semi-automatic machines. Focus on the American Welding Society's (AWS) numbering system for FCAW, machine capability, technical terms, gases and their mixtures, and the various types of filler materials.

4 Credits: 1 Hour Lecture, 9 Hour Lab

Enrollment requirement: (C) minimum overall GPA

### **WEL146: Gas Tungsten Arc Welding**

Introduction to the principles and practices of basic Gas Tungsten Arc Welding (GTAW) applied to ferrous and non-ferrous metals in various joint configurations in multiple positions. Focus on related equipment, electrical concepts, material properties, arc characteristics, puddle control, and appropriate application of filler materials.

4 Credits: 1 Hour Lecture, 9 Hour Lab

Enrollment requirement: (C) minimum overall GPA

## GENERAL EDUCATION COURSEWORK

**BIO103: Human Anatomy and Physiology Survey**

**CHM100: Fundamentals of Chemistry**

**ENL111: English Composition I \***

**HIS116: World History I \***

**HIS126: World History II \***

**HIS136: United States Survey to 1877 \***

**HIS146: United States Survey from 1877 to the Present \***

**PSC131: American Government-National \***

**PSC141: State and Local Government \***

**PSY111: General Psychology \***

**SOC111: Introduction to Sociology \***

\* No mixed classrooms allowed (unless mixed with AP equivalent course for History, PSC131, and PSY111)

## SOPHOMORE-APPROVED COURSES

**BCT103: Construction Hand and Power Tools**

**CAD122: 3D Parametric Modeling Using Autodesk Inventor**

**CHM100: Fundamentals of Chemistry**

**DSM119: Fuel Systems**

**DSM141: Heavy Duty Brake Systems**

**EET124: Engineering, Technology, and Society**

**ELT116: Construction Lab I: Residential**

**HIS116: World History I**

**HIS126: World History II**

**HIS136: United States Survey to 1877**

**HIS146: United States Survey from 1877 to the Present**

**MGT105: Introduction to Business**

**MTR100: Medical Terminology Survey**

**PPT116: Polymer Industries**

**WEL119: Shielded Metal Arc Welding**

## SENIOR-ONLY COURSES

**ENL111: English Composition I\***

**MTH123: Technical Algebra and Trigonometry I\***

\* No mixed classrooms allowed

# How do students benefit from Penn College Dual Enrollment?



## TIME AND MONEY

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Having earned college credit in high school, participating students can either ease their workload by taking fewer courses in a semester once at college or completing their chosen degree more quickly. In addition, since **tuition is free** for Penn College Dual Enrollment courses, students save money by taking fewer courses to complete their chosen degree. At Penn College, students only pay for the number of credits they take; that means that every Penn College Dual Enrollment credit earned in high school is like a scholarship to Penn College. Save on tuition costs by earning credits in a Penn College Dual Enrollment class.



## POSTSECONDARY SUCCESS

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Students who successfully complete college coursework while in high school are more likely to complete their chosen degree and graduate from college on time.



## CONFIDENCE

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Students gain experience with rigorous college coursework in a supportive and familiar setting – their high school or CTC. They learn that they **can** be successful at the next level!



## CONNECTION

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Our Penn College Dual Enrollment classrooms connect students to the “college experience.” They visit Penn College’s campus, tour the facilities, become familiar with college-level services and resources, and interact with our Penn College faculty and students.

EXPERIENCE  
ACQUIRED



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Adams County Technical Institute  
Admiral Peary Area Vocational-Technical School  
Beaver County Career & Technology Center  
Benton High School  
Berks Career & Technology Center  
Bethlehem Area Vocational-Technical School  
Bloomsburg Area High School  
Bradford Area High School  
Bucks County Technical High School  
Carlisle High School  
Central Montgomery County Technical High School  
Central Pennsylvania Institute of Science & Technology  
Central Westmoreland Career & Technology Center  
Chester County Technical College High School  
    Brandywine Campus  
    Pickering Campus  
    Pennock's Bridge Campus  
Clearfield County Career & Technology Center  
Columbia-Montour Area Vocational-Technical School  
Cumberland Perry Area Career & Technology Center  
Danville Area High School  
Dauphin County Technical School  
Dover Area High School  
Eastern Center for Arts & Technology  
Eastern Westmoreland Career & Technology Center  
Fayette County Career & Technical Institute  
Franklin County Career & Technology Center  
Greater Altoona Career & Technology Center  
Jersey Shore Area High School  
Juniata County School District  
    East Juniata High School  
    Juniata High School  
Keystone Central Career & Technical Center  
Lycoming Career & Technology Center  
Mahanoy Area High School  
Mercer County Career Center  
Mifflin County Academy of Science & Technology

Mifflinburg Area High School  
Milton Area High School  
Milton Hershey School  
Monroe Career & Technical Institute  
Montgomery Area High School  
Montoursville Area High School  
Northern Tier Career Center  
Northumberland Co. Career & Technology Center  
Red Lion Area High School  
River Valley High School  
Schuylkill Technology Centers  
Selinsgrove Area High School  
Seneca Highlands Career & Technology Center  
Shikellamy High School  
Somerset County Technology Center  
South Williamsport Area High School  
Southern Columbia Area High School  
Southern Tioga School District  
    North Penn - Liberty High School  
    North Penn - Mansfield High School  
St. John Neumann Regional Academy  
Sullivan County High School  
SUN Area Technical Institute  
Susquehanna County Career & Technology Center  
Troy Area High School  
Upper Dauphin High School  
Venango Technology Center  
Warren County Career Center  
Warrior Run High School  
Wellsboro High School  
West Shore School District  
    Cedar Cliff High School  
    Red Land High School  
Western Montgomery Career & Technology Center  
Williamson High School  
Williamsport Area High School  
York County School of Technology

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## **WELCOMING OUR NEW SECONDARY PARTNERS 2025-26**

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Eastern York High School  
Galeton High School

Mon Valley Career & Technology Center  
Western Area Career & Technology Center

**MICHAEL J. HUDOCK, SR.  
CENTER FOR ACADEMIC  
EXCELLENCE**

Davie Jane Gilmour Center, Room 1049  
Pennsylvania College of Technology  
One College Avenue  
Williamsport, PA 17701-5799 USA

secondarypartnerships@pct.edu  
570.320.5228



Pennsylvania College of Technology is an accredited institution and a member of the Middle States Commission on Higher Education (MSCHE). Pennsylvania College of Technology's accreditation status is Accreditation Reaffirmed. The Commission's most recent action on the institution's accreditation status on June 23, 2022, was to reaffirm accreditation.

The Middle States Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

Penn College operates on a nondiscriminatory basis.