



WHAT WE DO FOR A LIVING  
In The Commonwealth of Pennsylvania

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**Pennsylvania  
College of  
Technology**

PENNSTATE

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**D**ata reported in this publication was compiled by Pennsylvania College of Technology in January 2015. The compilation was inspired by a 1940 publication titled **What We Do for a Living in the City of Williamsport**.

Written by Dr. George H. Parkes, the founding director of Williamsport Technical Institute – a forerunner of Penn College – the 1940 report was the basis for The Williamsport Plan, a nationally-acclaimed effort to combat the effects of The Great Depression. Penn College reproduced the original 1940 booklet as part of its Centennial anniversary celebration in 2014.

*“What we do for a living”* is a relevant topic today – as public awareness of the types of jobs available and the educational preparation needed to secure those jobs is needed to help individuals match their interests with educational resources and employment opportunities.

This publication was developed to assist students, parents, and educators, as well as business and industry leaders and public officials (who assign resources to support education and workforce development), by sharing information about employment opportunities and the education and experience required to be successful in a wide range of career fields that exist in Pennsylvania.

As a national leader in applied technology education, Penn College – a special mission affiliate of Penn State – provides education and workforce training that meets emerging workplace needs. For more than 100 years, the institution has served the commonwealth by providing comprehensive educational programs and services that are relevant and responsive to business and industry.

More information on the institution’s history is available at [www.pct.edu/about/history.htm](http://www.pct.edu/about/history.htm).

## Are Pennsylvania residents well prepared to make a living?

This is an important question – one that educators, business and industry leaders, and public officials must be prepared to answer in addressing the challenges that face our generation and the next.

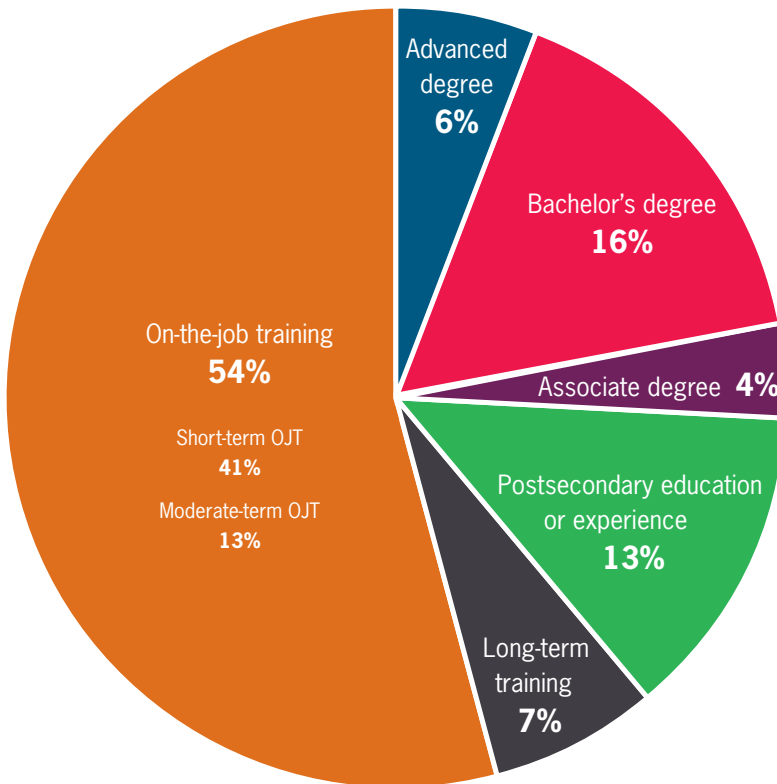
More than one-third (39%) of Pennsylvania’s 5.8 million jobs now require a college degree or some postsecondary education/experience. Projections indicate that number will grow over the next decade.

### Educational Preparation

Required for Jobs in Pennsylvania

Projected through 2022

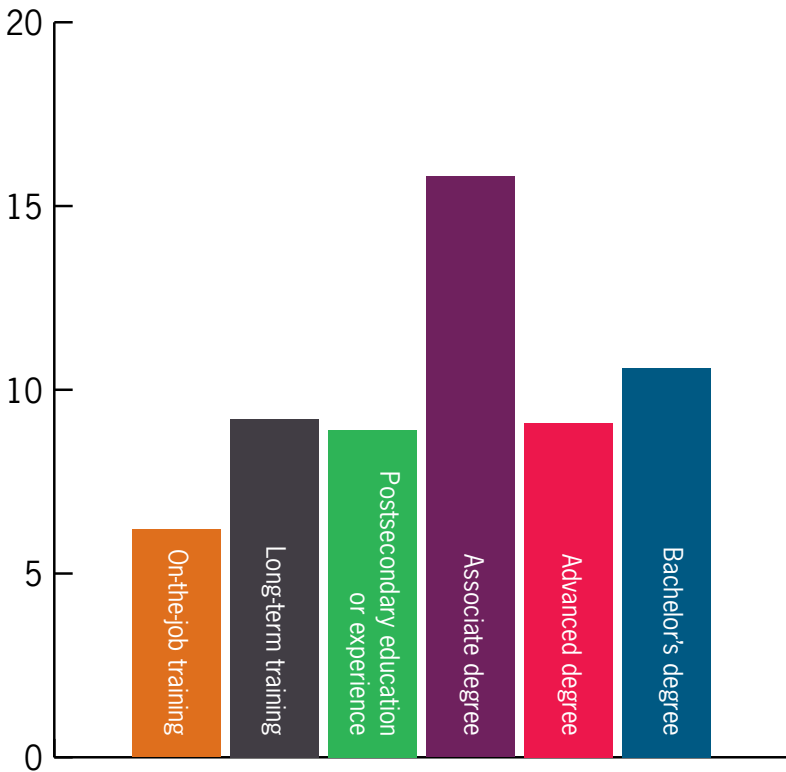
Employment Distribution by Educational Level



Source: The Pennsylvania Department of Labor & Industry Center for Workforce Information & Analysis



### Employment Growth by Educational Level



Source: The Pennsylvania Department of Labor & Industry Center for Workforce Information & Analysis

## Skills Gap & Work Ethic

Despite public debate regarding the relevance of a traditional college degree in today's workplace, business and industry leaders point to a "skills gap" that hinders their success in attracting qualified workers. While a short supply of specialized skills is reflected in this gap, employers also cite a need for an improved general work ethic to combat the lack of commitment, unreliability, and inability to follow instructions and complete tasks that are barriers to success in the workplace.

Partnerships between public educators at the secondary and postsecondary levels, business and industry, and government leaders are necessary to ensure that men and women are well prepared to secure employment that not only sustains individual households, but also contributes to the overall well-being of communities.

Curriculum development that addresses emerging workplace needs; collaborative efforts to offer internships, apprenticeships, and faculty connections to business and industry; and funding for school-to-work and workforce development initiatives that keep pace with advancing technology are necessary to provide residents with opportunities to make a living and to live rich, rewarding lives in the Commonwealth of Pennsylvania.



Penn College NOW dual enrollment allows high school students to earn free college credits.

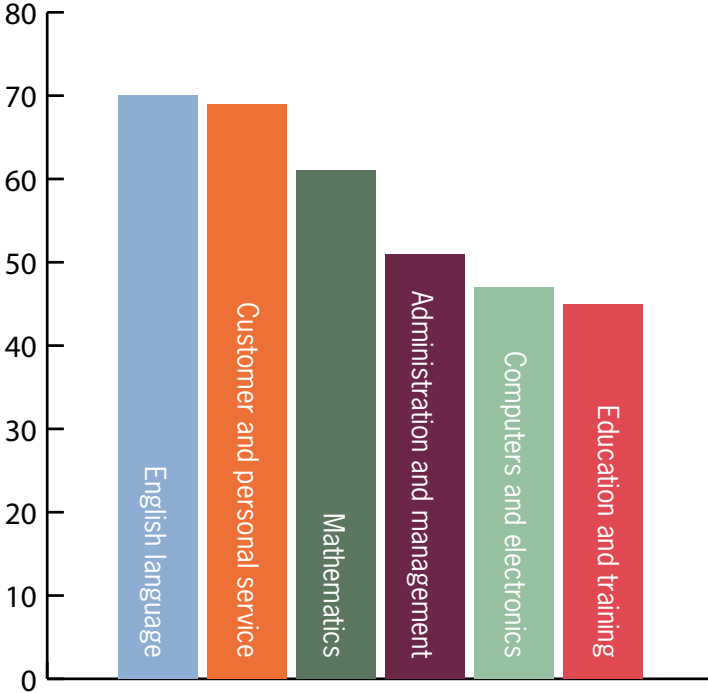


Business and industry leaders serve as Penn College advisers.



Campus is home to nationally-acclaimed workforce initiatives – Plastics Innovation & Resource Center, National Sustainable Structures Center, Shale Training & Education Center (ShaleTEC) and ShaleNET.

## Common skills, or knowledge areas, required across all occupations



Source: The Pennsylvania Department of Labor and Industry Center for Workforce Information & Analysis

## What Do Employers Want?

Employers often struggle to find qualified candidates who are able to fill immediate needs within their companies or to support their companies' plans for expansion. Companies – especially small and mid-sized ones – often lack the resources to provide in-house training for newly-hired employees. So, many position openings require candidates to have related experience before hiring.

Recent graduates and others with limited work experience often share a similar concern: How do they get the experience they need to be successful if every position they apply for requires previous work experience?

Education that combines academics with access to hands-on work opportunities – from community service projects to formal internships – answers a real need for employers and for individuals seeking job opportunities.



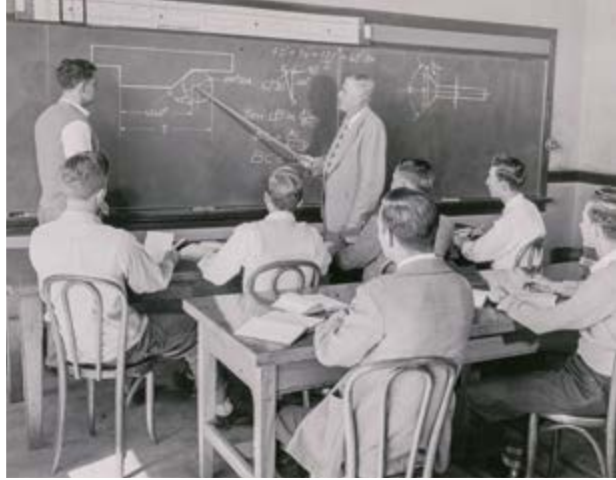
Students and adults increase their chances for employment and advancement by earning “degrees that work” and completing noncredit, workforce development programs.





A century of success is rooted in Penn College's respect for the "working class" – defined not only as a group contributing labor to the workforce, but also as a classroom engaging students both in traditional, general education, and relevant, hands-on, work-related activity.

[www.pct.edu/workingclass](http://www.pct.edu/workingclass)



# Centennial

1914  2014

Pennsylvania College of Technology

FORMERLY

Williamsport Area Community College

Williamsport Technical Institute

Williamsport Area School District Adult Education



## Comprehensive Education

*“All labor that uplifts humanity has dignity and importance and should be undertaken with painstaking excellence.”*

Martin Luther King Jr.

While there is a traditional divide between American academic and vocational education programs, Penn College continues a unique, century-old commitment to offering a comprehensive educational experience that equally values general education and hands-on experience.

Penn College students develop not only the specific, applied technology skills appropriate to their fields of study, but also their foundational skills in mathematics, communications, and the humanities. This combination of academic rigor and applied technology allows graduates to successfully enter the workforce with the tools they need for immediate and long-term success.

### **Top projected skills (long term) in areas of projected employment growth:**

- Use oral or written communication techniques
- Maintain records, reports, or files
- Use computers to enter, access, or retrieve data
- Provide customer service
- Clean rooms or work areas
- Direct and coordinate activities of workers or staff
- Obtain information from individuals
- Answer customer or public inquiries
- Prepare reports
- Measure, weigh, or count products or materials

Source: The Pennsylvania Department of Labor and Industry Center for Workforce Information & Analysis

## Emerging Workforce Needs

Keeping pace with an ever-changing workplace, heavily influenced by emerging technologies, is crucial to success in today's workplace. Evidence of Penn College's responsiveness to emerging workforce needs is displayed throughout its curriculum, which focuses on applied technology and academic rigor.

### Fastest Growing Occupations (both rate and volume)

- Computer Software Engineers, Applications
- Farm, Ranch & Other Agricultural Managers
- Network Systems Analysts
- Network Systems & Data Communications Analysts
- Pharmacists

Source: The Pennsylvania Department of Labor and Industry Center for Workforce Information & Analysis




Information technology degrees prepare computer software engineers, network systems analysts, and data communications analysts for fast-growing occupations.

A growing need for farm/ranch/agricultural managers might be addressed through degrees related to natural resources management.



## Fastest Growing Occupations in Pennsylvania

Projected through 2018 – List indicates education and experience required.

 Degree and/or noncredit training offered by Penn College

Penn College also offers the opportunity for students to take their first steps on a career ladder by transferring credits from associate or bachelor's-degree programs to colleges and universities offering master's, doctoral, and professional degrees.




PROFESSIONAL DEGREE	
Anesthesiologists	
Chiropractors	
Family & General Practitioners	
Lawyers	
Pharmacists	
Psychiatrists	
Veterinarians	
DOCTORAL DEGREE	
Biochemists & Biophysicists	
Computer & Information Scientists	
Medical Scientists	
Postsecondary Teachers	
MASTER'S DEGREE	
Health Educators	
Mental Health Counselors	
Mental Health & Substance Abuse Social Workers	
Physical Therapists	
Recreation & Fitness Studies Teachers	
Rehabilitation Counselors	
Substance Abuse & Behavioral Counselors	
BACHELOR'S DEGREE PLUS WORK EXPERIENCE	
Computer & Information Systems Managers	
Education Administrators	
Education Administrators, Preschool & Child Care	
Farm & Agricultural Managers	
Medical & Health Services Managers	
Natural Sciences Managers	
BACHELOR'S DEGREE	
Accountants & Auditors	
Biomedical Engineers	
Computer Software Engineers	
Computer Systems Analysts	
Graduate Teaching Assistants	
Network Systems Analysts	
Network & Computer Systems Administrators	
Physician Assistants	
ASSOCIATE DEGREE	
Cardiovascular Technologists & Technicians	
Dental Hygienists	
Medical & Clinical Laboratory Technicians	
Occupational Therapist Assistants	
Paralegals & Legal Assistants	
Physical Therapist Assistants	
Radiologic Technologists & Technicians	
Registered Nurses	
Respiratory Therapists	
Veterinary Technologists & Technicians	

POSTSECONDARY VOCATIONAL AWARD	
Automotive Technicians & Mechanics	
Fitness Trainers & Aerobics Instructors	
Hairdressers, Hairstylists & Cosmetologists	
Licensed Practical Nurses	
Manicurists & Pedicurists	
Massage Therapists	
Medical Secretaries	
Skin Care Specialists	
Surgical Technologists	
WORK EXPERIENCE IN A RELATED OCCUPATION	
Construction & Building Inspectors	
Construction Trades & Excavation Supervisors	
Detectives & Criminal Investigators	
Food Preparation & Service Supervisors	
Private Detectives & Investigators	
Railroad Conductors & Yardmasters	
Vocational Education Teachers	
LONG TERM, ON THE JOB TRAINING	
Athletes & Sports Competitors	
Audio & Video Equipment Technicians	
Cooks, Restaurant	
Farmers & Ranchers	
Farmworkers, Crop, Nursery & Greenhouse	
Industrial Machinery Mechanics	
Police & Sheriff's Patrol Officers	
MODERATE TERM, ON THE JOB TRAINING	
Customer Service Representatives	
Dental Assistants	
Medical Assistants	
Medical Equipment Repairers	
Pharmacy Technicians	
Social & Human Service Assistants	
Truck Drivers, Heavy & Tractor-Trailer	
SHORT TERM, ON THE JOB TRAINING	
Combined Food Preparation & Servicing Workers	
Home Health Aides	
Locomotive Engineers	
Nursing Aides, Orderlies & Attendants	
Personal & Home Care Aides	
Physical Therapist Aides	
Retail Salespersons	
Tire Repairers & Changers	

Source: The Pennsylvania Department of Labor and Industry Center for Workforce Information & Analysis

# Statewide High-Priority Occupations

 Degree and/or noncredit training offered by Penn College

**AD** Associate's degree  
**BD** Bachelor's degree  
**LT OJT** Long term, on the job training  
**MD** Master's degree  
**MT OJT** Moderate term, on-the-job training

**PS** Postsecondary vocational award  
**PROF** Professional degree & licensure  
**ST OJT** Short term, on-the-job training  
**WK EXP** Work experience in a related occupation  
**+** Degree/award plus work experience

Architecture / Engineering		
Civil Engineers	BD	
Industrial Engineers	BD	
Mechanical Engineers	BD	
Arts / Entertainment / Media		
Coaches & Scouts	BD	
Business / Financial		
Accountants & Auditors	BD	
Claims Adjusters, Examiners & Investigators	LT OJT	
Cost Estimators	BD	
Financial Analysts	BD	
Insurance Underwriters	BD +	
Logisticians	BD	
Market Research Analysts & Marketing Specialists	BD	
Purchasing Agents	LT OJT	
Training & Development Specialists	BD +	
Community / Social Services		
Child, Family & School Social Workers	BD	
Health Educators	BD	
Mental Health & Substance Abuse Social Workers	BD	
Substance Abuse & Behavioral Disorder Counselors	MT OJT	
Computer / Math		
Computer Programmers	BD	
Computer Support Specialists	PS	
Computer Systems Analysts	BD	
Network & Computer Systems Administrators	BD	
Software Developers, Applications	BD	
Software Developers, Systems Software	BD	

<b>Construction / Extraction</b>		
Brickmasons & Blockmasons	LT OJT	
Carpenters	LT OJT	
Cement Masons & Concrete Finishers	MT OJT	
Construction & Building Inspectors	WK EXP	
Constructor Laborers	ST OJT	
Drywall & Ceiling Tile Installers	MT OJT	
Electricians	LT OJT	
Helpers – Extraction Workers	MT OJT	
Operating Engineers & Other Construction Equipment Operators	MT OJT	
Painters, Construction & Maintenance	MT OJT	
Plumbers, Pipefitters & Steamfitters	LT OJT	
Rotary Drill Operators, Oil & Gas	MT OJT	
Roustabouts, Oil & Gas	MT OJT	
Service Unit Operators, Oil, Gas & Mining	MT OJT	
Supervisors – Construction Trades & Extraction Workers	WK EXP	
<b>Education / Library</b>		
Career/Technical Education Teachers, Secondary School	BD+	
Self-Enrichment Education Teachers	WK EXP	
<b>Food Service</b>		
Supervisors – Food Preparation & Serving Workers	WK EXP	
<b>Healthcare Professionals</b>		
Cardiovascular Technologists & Technicians	AD	
Dental Hygienists	AD	
Diagnostic Medical Sonographers	AD	
Emergency Medical Technicians & Paramedics	PS	
Licensed Practical & Licensed Vocational Nurses	PS	
Medical & Clinical Laboratory Technicians	AD	
Medical & Clinical Laboratory Technologists	BD	
Medical Records & Health Information Technicians	PS	
Occupational Therapists	MD	
Pharmacists	PROF	
Radiologic Technologists & Technicians	AD	
Registered Nurses	AD	
Respiratory Therapists	AD	
Veterinary Technologists & Technicians	AD	

<b>Healthcare Support</b>		
Dental Assistants	PS	
Occupational Therapy Assistants	AD	
Physical Therapist Assistants	AD	
<b>Legal</b>		
Paralegals & Legal Assistants	AD	
<b>Life / Physical / Social Science</b>		
Biological Technicians	BD	
<b>Maintenance / Repair</b>		
Automotive Body & Related Repairers	MT OJT	
Automotive Service Technicians & Mechanics	LT OJT	
Bus & Truck Mechanics & Diesel Engine Specialists	LT OJT	
Electrical Power-Line Installers & Repairers	LT	
Heating, A/C & Refrigeration Mechanics & Installers	PS +	
Industrial Machinery Mechanics	LT OJT	
Maintenance & Repair Workers, General	LT OJT	
Security & Fire Alarm Systems Installers	MT OJT	
Supervisors – Mechanics, Installers & Repairers	WK EXP	
Telecommunications Equipment Installers & Repairers	PS +	
<b>Management</b>		
Industrial Production Managers	BD +	
Sales Managers	BD +	
<b>Office &amp; Administrative Support</b>		
Bill & Account Collectors	MT OJT	
Billing & Posting Clerks	ST OJT	
Bookkeeping, Accounting & Auditing Clerks	MT OJT	
Cargo & Freight Agents	ST OJT	
Customer Service Representatives	ST OJT	
Insurance Claims & Policy Processing Clerks	MT OJT	
Production, Planning & Expediting Clerks	MT OJT	
Secretaries	ST OJT	
Shipping, Receiving & Traffic Clerks	ST OJT	
Supervisors – Office & Administrative Support Workers	WK EXP	

Pennsylvania Workforce Development offers a full listing of Pennsylvania occupations, identifying the educational level required for each position at: [http://www.portal.state.pa.us/portal/server.pt/community/high\\_priority\\_occupations/12910/cip\\_to\\_soc\\_crosswalk\\_table/575374](http://www.portal.state.pa.us/portal/server.pt/community/high_priority_occupations/12910/cip_to_soc_crosswalk_table/575374)



Personal Services		
Fitness Trainers & Aerobics Instructors	ST OJT	
Gaming Dealers	ST OJT	
Production		
Butchers & Meat Cutters	LT OJT	
Computer Numerically Controlled Machine Tool Programmers, Metal & Plastic	LT OJT	
Computer-Controlled Machine Tool Operators, Metal & Plastic	MT OJT	
Extruding & Drawing Machine Setters, Operators & Tenders, Metal & Plastic	MT OJT	
Heat Treating Equipment Setters, Operators & Tenders, Metal & Plastic	MT OJT	
Inspectors, Testers, Sorters, Samplers & Weighers	MT OJT	
Machinists	LT OJT	
Meat, Poultry & Fish Cutters & Trimmers	ST OJT	
Multiple Machine Tool Setters, Operators & Tenders, Metal & Plastic	MT OJT	
Packaging & Filling Machine Operators & Tenders	MT OJT	
Power Plant Operators	LT OJT	
Print Binding & Finishing Workers	ST OJT	
Printing Press Operators	MT OJT	
Supervisors – Production & Operating Workers	PS +	
Welders, Cutters, Solderers & Brazers	MT OJT	
Sales		
Insurance Sales Agents	MT OJT	
Real Estate Sales Agents	LT OJT	
Sales Representatives	MT OJT	
Sales Representatives, Technical & Scientific Products	BD +	
Securities, Commodities & Financial Services Sales Agents	BD +	
Supervisors – Retail Sales Workers	WK EXP	
Transportation		
Heavy & Tractor-Trailer Truck Drivers	PS +	
Industrial Truck & Tractor Operators	ST OJT	
Light Truck or Delivery Services Drivers	ST OJT	
Supervisors – Helpers, Laborers & Material Movers	WK EXP	
Supervisors – Transportation & Vehicle Operators	WK EXP	
Wellhead Pumpers	WK EXP	

Source: The Pennsylvania Department of Labor and Industry Center for Workforce Information & Analysis

**Complete listings available online**

See page 19 for a list of majors offered by Penn College.

*“Industry connections are the heart of the institution. In order for our graduates to be successful throughout their lives, we must do everything we can to encourage a vibrant Pennsylvania workforce.”*

Davie Jane Gilmour, Ph.D.

President, Pennsylvania College of Technology

Penn College ranks among the top 10 public colleges in the north, according to *America’s Best Colleges*, and is one of the nation’s top 100 associate degree producers, according to *Community College Weekly*. Programs of study offer opportunities for students to earn baccalaureate or associate degrees related to more than 100 career fields. Graduate placement rates historically exceed 90 percent annually.

In addition to its national reputation for applied-technology degrees, Penn College provides a solid program of outreach to industry through Workforce Development & Continuing Education (WDCE). With a wide range of offerings, WDCE programs help industry clients develop new ideas and products and train workers without hindering day-to-day operations.

Notable industry partnerships include the Plastics Innovation & Resource Center (PIRC), one of the nation’s top centers for plastics research, development, and education; National Sustainable Structures Center (NSSC), a nationally-recognized U.S. Department of Energy Legacy Weatherization Training Center; and outreach partnerships that address the emerging needs of the natural gas industry through Shale Training & Education Center (ShaleTEC) and the federally-funded ShaleNET career awareness and education project.

Penn College also manages WEDnetPA, the state’s largest job training program, which is funded through the Department of Community & Economic Development and provides companies with access to free basic skills and information technology training for workers through partner locations throughout the state.

Across the commonwealth, Penn College shares expertise and training that delivers quality results for industry.



## ***degrees that work.***

### **Pennsylvania College of Technology**

Academic Schools & Majors

#### **Business & Hospitality**

Accounting/Finance  
Applied Management  
Business Administration  
Hospitality

#### **Construction & Design Technologies**

Architectural Technology  
Building Construction  
Civil Engineering & Surveying  
Construction Management  
Heating, Ventilation & Air Conditioning

#### **Health Sciences**

Applied Health Studies  
Dental Hygiene  
Emergency Medical Services/Paramedic  
Health Information Technology  
Medical Imaging  
Nursing  
Occupational Therapy Assistant  
Physical Fitness Specialist  
Physician Assistant  
Surgical Technology

#### **Industrial, Computing & Engineering Technologies**

Applied Technology Studies  
Automated Manufacturing & Machining  
Electrical  
Electronics & Computer Engineering Technology  
Engineering Design Technology  
Information Technology  
Plastics & Polymer  
Welding

#### **Sciences, Humanities & Visual Communications**

Early Childhood Education  
Emergency Management  
Graphic Design,  
Web Development & Art  
Human Services  
Individualized Programs of Study  
Industrial & Human Factors Design  
Legal Assistant/Paralegal

#### **Transportation & Natural Resources Technologies**

Automotive  
Aviation  
Collision Repair & Restoration  
Diesel & Power Generation  
Forestry  
Heavy Equipment  
Landscape/Horticulture

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**[www.pct.edu](http://www.pct.edu)**

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