

Electrical Engineers

Standard Occupational Code (SOC): 17-2071

Occupational Overview

Electrical Engineers design, develop, test, or supervise the manufacturing an installation of electrical equipment, components, or systems for commercial, industrial, military, or scientific use.

Employment & Wage Figures

	PA Statewide	Southwest Corner WIA	Three Rivers WIA	Tri-County WIA	West Central WIA	Westmoreland and Fayette WIA
Average Annual Wage 2007:	\$78,640	\$68,450	\$81,500	\$71,720	\$65,480	\$78,230
Entry Level Wage 2007:	\$52,180	\$48,020	\$55,750	\$45,790	\$40,270	\$53,560
Experienced Level Wage 2007:	\$91,860	\$78,670	\$94,380	\$84,680	\$78,090	\$90,560
Estimated Employment 2004:	6,190	140	1,330	250	30	210
Projected Employment 2014:	6,480	130	1,310	270	30	170
Percent Change 2004-14:	4.7%	-7.1%	-1.5%	8.0%	0.0%	-19.0%
Annual Openings 2004-14:	151	2	24	7	1	0

Nature of Work

Electrical engineers design, develop, test, and supervise the manufacture of electrical equipment. Some of this equipment includes electric motors; machinery controls, lighting, and wiring in buildings; automobiles; aircraft; radar and navigation systems; and power generation, control, and transmission devices used by electric utilities.

Although the terms electrical and electronics engineering are often used interchangeably in academia and industry, electrical engineers have traditionally focused on the generation and supply of power, whereas electronics engineers have worked on applications of electricity to control systems or signal processing. Electrical engineers specialize in areas such as power systems engineering or electrical equipment manufacturing.

Related Occupations

Engineering Managers
Aerospace Engineers
Electronics Engineers, Except Computer
Marine Architects
Mechanical Engineers
Mining & Geological Engineers
Nuclear Engineers
Electricians

Top Employing Industries

Architectural, Engineering & Related Services
Electronic Instrument Manufacturing
Power Supply & Generation
Federal Government
Management & Technical Consulting Services
Electrical Equipment Manufacturing
Wireless Telecommunications Carriers

Education & Training

A bachelor's degree is the minimum education required; however, a graduate degree is recommended for many entry-level jobs. Pennsylvania requires engineers whose work may affect lives, health, or property to obtain a Professional Engineer's (PE) license.

Knowledge Required

Engineering & Technology
Computers & Electronics
Mathematics
English Language
Design
Physics
Telecommunications
Production & Processing

Skills Needed

Active Listening
Troubleshooting
Critical Thinking
Reading Comprehension
Complex Problem Solving
Technology Design
Systems Analysis
Time Management

Additional Resources

Institute of Electrical & Electronics Engineers-USA www.ieeeusa.org
National Society of Professional Engineers www.ncees.org
American Society for Engineering Education www.asee.org