

# Occupational Profile

## Electrical Engineers



### DOES THIS DESCRIBE YOU?

**Work Interests** involve descriptive categories (compatible with Holland's Model) attributed to success in this career:

- **Investigative** – Involves working with ideas requiring an extensive amount of research, fact finding, problem solving, and thought analysis.
- **Realistic** – Involves work activities that include practical, hands-on problems and solutions; often dealing with plants, animals, and real-world materials like wood, tools, and machinery.

**Work Styles** depict worker characteristics conducive for this career:

- **Analytical Thinking**
- **Attention to Detail**
- **Persistence**
- **Integrity**
- **Achievement/Effort**

**Work Values** are associated with aspects of work that provide satisfaction in this career:

- **Achievement**—Sense of accomplishment; results oriented.
- **Working Conditions**—Job security; good working conditions.
- **Independence**—Autonomy; working on your own.

**Aptitudes** reflect an ability to acquire skills and knowledge for success in this career:

- **Deductive Reasoning**
- **Oral Comprehension**
- **Problem Sensitivity**
- **Written Comprehension**
- **Category Flexibility**

### OVERVIEW

Research, design, develop, test or supervise the manufacturing and installation of electrical equipment, components or systems for commercial, industrial, military or scientific use. Belongs to the Scientific Research/Engineering career cluster and Engineering and Technology career pathway.

### SKILLS & KNOWLEDGE NEEDED

#### Basic Skills:

- Reading Comprehension
- Active Listening
- Writing
- Critical Thinking
- Complex Problem Solving

#### Technology Skills:

- Analytical or Scientific Software
- Computer Aided Design Software
- Development Environment Software
- Object or Component Oriented Development Software
- Operating System Software

#### Knowledge:

- Engineering and Technology
- Computers and Electronics
- Design
- Mathematics
- English Language

## ESTIMATED & PROJECTED EMPLOYMENT

Occupational Title	2014 Estimated Employment	2024 Projected Employment	2014-24 Employment Change	Annual Growth Rate (%)	Total Annual Openings
Total, All Occupations	1,795,100	1,949,240	154,140	0.9	58,145
Architecture & Engineering Occupations	19,925	21,300	1,375	0.7	625
Electrical Engineers	1,305	1,405	100	0.8	40

Source: <https://www.iowaworkforcedevelopment.gov/occupational-projections>

## 2017 WAGE & SALARY (\$)

Occupational Title	Mean Wage	Mean Salary	Entry Wage	Entry Salary	Exp Wage	Exp Salary
Total All Occupations	20.93	43,539	10.09	20,991	26.35	54,813
Architecture & Engineering Occupations	33.39	69,442	21.12	43,934	39.52	82,195
Electrical Engineers	42.12	87,618	30.42	63,270	47.98	99,792

Source: <https://www.iowaworkforcedevelopment.gov/occupational-employment-and-wages>

## EDUCATION & TRAINING



Education	Work Experience	Job Training
Bachelor's Degree	None	None

A bachelor's degree is required for engineering positions. Licenses, certificates, and/or commissions may be required. Sources: <https://www.iowaworkforcedevelopment.gov/occupational-projections>, [https://www.bls.gov/emp/ep\\_education\\_training\\_system.htm](https://www.bls.gov/emp/ep_education_training_system.htm), and <https://www.iowaworkforcedevelopment.gov/iowa-licensed-occupations>

## NATIONAL CAREER READINESS CERTIFICATE (NCRC)

Skill	Median Skill Level	Minimum Skill Level	Maximum Skill Level
Applied Mathematics	7	7	7
Locating Information	6	6	6
Reading for Information	6	6	7
Applied Technology	6	5	6
Business Writing	3	3	4
Workplace Observation	4	3	4
Listening for Understanding	3	3	4

An ACT assessment-based credential issued in determining essential work skills needed for employment success across industries and occupations. The greater the score, the greater the skill level (Bronze = 3, Silver = 4, Gold = 5, Platinum = 6 & higher). Source: <http://www.act.org/content/act/en/products-and-services/workkeys-for-employers/assessments.html>

## ADDITIONAL SOURCES:

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## PRIMARY INDUSTRY SECTORS

(Where are Electrical Engineers Employed?)

Computer and Electronic Product Mfg  
Professional, Scientific, & Technical  
Utilities  
Machinery Mfg  
Electrical Equipment, Appliance, & Component Mfg  
Food Mfg

Source: <https://www.iowaworkforcedevelopment.gov/occupational-projections>