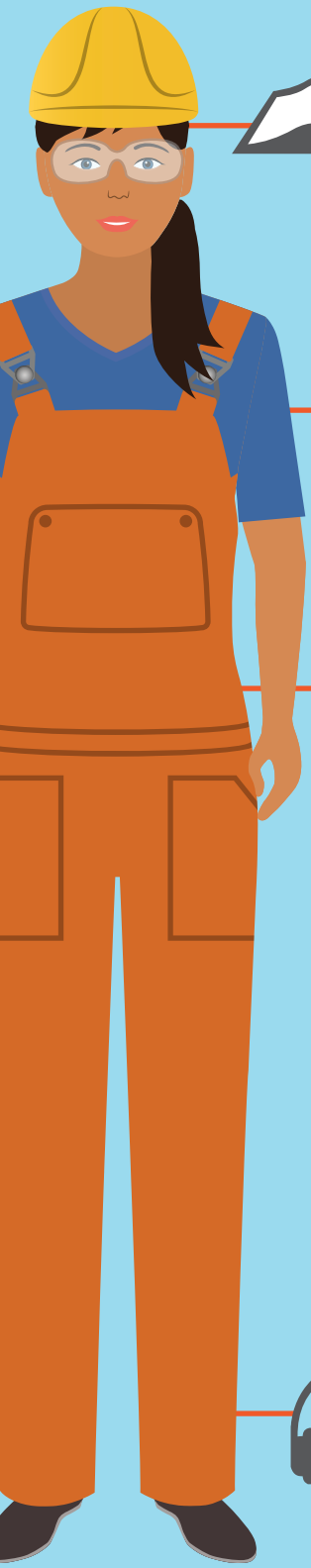
# In Demand Manufacturing Careers

## FIRST-LINE SUPERVISOR OF PRODUCTION AND OPERATING WORKERS



### EDUCATION

Usually requires a high school diploma, combined with technical training and on-the-job training, which may include an apprenticeship.

### IMPORTANT QUALITIES

- Active listening
- Coordination
- Critical thinking
- Management of personnel resources
- Speaking

### WHAT THEY DO

Directly supervise and coordinate the activities of production and operating workers, such as inspectors, precision workers, machine setters and operators, assemblers, fabricators, and plant and system operators.

### EMPLOYMENT OPPORTUNITIES

MEDIAN ANNUAL WAGE $63,054

Employment of first-line supervisors is projected to grow 5.4% from 2020 to 2030.

### WORK ENVIRONMENT

Most first-line supervisors work indoors, are in constant contact with others, and often are exposed to sound levels that are distracting or uncomfortable. Most work full time and overtime is common.

## INDUSTRIAL ENGINEERING TECHNICIAN

### EDUCATION

Industrial engineering technicians typically need an associate's degree or a postsecondary certificate. Community colleges and technical institutes generally offer associate's degree programs, and vocational–technical schools offer certificate programs.

### IMPORTANT QUALITIES

- Analytical skills
- Complex problem solving
- Critical thinking
- Math skills
- Observational skills
- Reading comprehension

### WHAT THEY DO

Apply engineering theory and principles to problems of industrial layout or manufacturing production, usually under the direction of engineering staff. May perform time and motion studies on worker operations in a variety of industries for purposes such as establishing standard production rates or improving efficiency.

### EMPLOYMENT OPPORTUNITIES

MEDIAN ANNUAL WAGE $50,220

Employment of industrial engineering technicians is projected to grow 5.6% from 2020 to 2030.

### WORK ENVIRONMENT

Industrial engineers usually ask industrial engineering technicians to help carry out certain studies and make specific observations. Consequently, these technicians typically work at the location where products are manufactured or where services are delivered.

Northwest PIC inc

Rural Minnesota CEP concentrated employment program, inc

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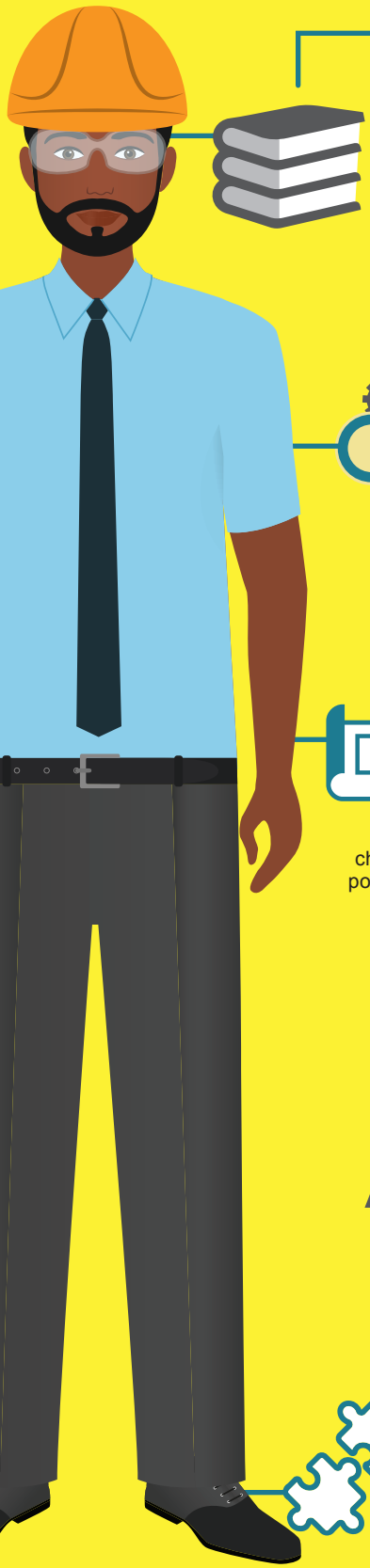
## CIVIL ENGINEER

## INDUSTRIAL ENGINEER



### EDUCATION

Civil engineers need a bachelor's degree. They typically need a graduate degree and a license for promotion to senior positions. Although licensure requirements vary from state to state, civil engineers usually must be licensed if they provide services directly to the public.

Industrial Engineers typically need a bachelor's degree in mechanical engineering or mechanical engineering technology.

### IMPORTANT QUALITIES

- Complex problem solving
- Decision-making skills
- Leadership
- Mathematical skills
- Reading comprehension
- Speaking skills

- Project management
- Problem solving
- Data analysis
- Product development
- Work independently
- Management skills

### WHAT THEY DO

Perform engineering duties in planning, designing, and overseeing construction and maintenance of building structures, and facilities, such as roads, railroads, airports, bridges, harbors, channels, dams, irrigation projects, pipelines, power plants, and water and sewage systems.

Develops and documents the required parameters for machines and tools used to produce products. Analyze problems to see how mechanical and thermal devices might help solve a particular problem. Investigate equipment failures or difficulties to diagnose faulty operation and to recommend remedies. Analyze the test results and change the design or system as needed. Oversee the manufacturing process for the device.

### EMPLOYMENT OPPORTUNITIES

**MEDIAN ANNUAL WAGE $99,149**

Employment of civil engineers is projected to grow 5.6% from 2020 to 2030.

**MEDIAN ANNUAL WAGE $86,803**

Employment of industrial engineers is projected to grow 11.9% from 2020 to 2030.

### WORK ENVIRONMENT

Civil engineers work in a variety of locations and conditions. When working on designs, civil engineers may spend most of their time indoors in offices. However, construction engineers may spend much of their time outdoors at construction sites monitoring operations or solving onsite problems.

Industrial Engineers generally work in offices. They may occasionally visit worksites where a problem or piece of equipment needs their personal attention.