

# Mechanical Engineer

## About my job:

As a mechanical engineer, I design, build and test mechanical and thermal devices, including tools, engines and machines.



## What I do every day:

- Interpret blueprints, technical drawings, schematics and computer-generated reports
- Assist drafters in developing products using drafting tools or computer-assisted design (CAD) or drafting equipment and software
- Research, design, install and maintain mechanical products, equipment, systems and processes, applying knowledge of engineering principles
- Confer with engineers or other colleagues to implement operating procedures, resolve system problems and provide technical information
- Perform research that tests and analyzes the feasibility, design, operation and performance of equipment, components and systems
- Investigate equipment difficulties to diagnose faulty operation, and make recommendations to provide solutions
- Develop and coordinate all aspects of production, including selection of manufacturing methods, fabrication and operations
- Specify system components to ensure conformance with engineering design and performance specifications

## What makes my job great?

### Job growth:

Employment of mechanical engineers is projected to grow 5 percent from 2012 to 2022.

### Short-term training:

Mechanical engineers require a bachelor's degree. A graduate degree is typically needed for promotion into managerial positions.

### Good pay:

The average median salary is \$70,800/year. (That means that 50 percent of mechanical engineers earn less than this number, and the other 50 percent earn more.)

### Benefits:

Most mechanical engineers work full time with benefits that may include:

- **Healthcare**
- **Paid vacation**
- **Tuition reimbursement**

# How can you become a mechanical engineer?



## Academic/training credentials:

A bachelor's degree is required for entry-level mechanical engineering jobs. A master's degree and professional engineer's certification will assist with career advancement.

## Other credentials:

After post-graduate work experience, a professional engineer's certification can be obtained. In addition, each state requires licensure to sell engineering services publically.

## Work experience/internships:

Prior experience is valued by employers and may be obtained through internship programs offered through college career services departments. To find out more about local opportunities, contact Lakeland Career Services at 440.525.7222.

## Skills and requirements:

- Strong computer skills in programs like Solid Works and Auto Cad
- Excellent problem solving and creative thinking skills
- Strong verbal and written communication skills

## Where you can find jobs:

- Online job boards
- Career fairs
- Department of Career Services at colleges
- Networking
- Company websites
- Social media

## Potential job titles:

- Design engineer
- Product engineer
- Mechanical design engineer
- Process engineer
- Equipment engineer
- Design maintenance engineer
- Systems engineer
- Chassis systems engineer
- Commissioning engineer

## Potential local employers:

- Component Repair Technologies
- General Electric
- Jergens, Inc.
- Lubrizol
- NASA Glenn Research Center
- Parker Hannifin
- Siemens
- Steris
- Swagelok



# Local educational opportunities

## Two-year institutions:

- Lakeland Community College: Associate of Applied Science in Mechanical Engineering Technology
  - Auto CAD operator certificate
  - CAD design certificate

Contact Lakeland Mechanical Engineering Technology Co-Department Chair at 440.525.7168.
- Cuyahoga Community College: Associate of Applied Science in Mechanical Engineering Technology
  - Computer aided drafting and design certificate
  - Mechatronics certificate
  - Quality control certificate



## Four-year institutions:

- Cleveland State University: Bachelor of Science in Mechanical Engineering
- University of Akron: Bachelor of Science in Mechanical Engineering
- Youngstown State University: Bachelor of Engineering Degree

**Ohio College Tech Prep**  
Building Quality Career Pathways

## High School Tech Prep:

- A-TECH: precision machining program
- Auburn Career Center: advanced manufacturing program
- Lake Shore Compact: CAD engineering program
- Excel TECC: engineering technology
- Contact your high school guidance office



## Coursework per educational entity:

**Secondary pathway:**  
CAD Engineering

**Postsecondary program:**  
Mechanical Engineering Technology

An Example of Course with Secondary and Postsecondary Credits

Secondary	7 8	English I	Algebra I	Physical Science	Social Studies	Fine Arts	Pre-Engineering Technologies		
	9 10	English II	Geometry	Biology	World History	Health (.5) PE (.5)	World Languages		
	11	English III	Algebra II	Chemistry	U.S. History	Shop Safety	Engineering Design	AutoCAD	World Languages
	12	English IV	Trigonometry/ Calculus	Physics	U.S. Government	SolidWorks	Architectural Drafting		
Postsecondary	Year 1 1st Semester	Introduction to AutoCAD	Applied Physics	Machining Processes	English Composition	Introduction to Engineering Technology	First Year Experience	Technical Mathematics I	
	Year 1 2nd Semester	Materials Processing	Technical Mathematics II	English Composition Technical Focus	Geometric Dimensioning and Tolerancing	Engineering Mechanics I	Applied Physics II		
	Year 2 1st Semester	Introduction to SolidWorks	Fundamentals of Public Speaking	Engineering Mechanics II	Strength of Materials	Arts and Humanities Elective			
	Year 2 2nd Semester	Applied Electricity	Fluid Power Technology	Design and Manufacturing Capstone	Quality Concepts and Techniques	Design of Machine Elements	Social and Behavioral Science Elective		
High School Career-Technical Education Program Courses									
High School Courses for Postsecondary Credit (Including Apprenticeship Hours) and the Corresponding Postsecondary Courses									
Required Courses									
Recommended Electives									
		Ohio Department of Education		Ohio REWARDS Jobs		Ohio Board of Regents University System of Ohio			

# How can I grow my career?

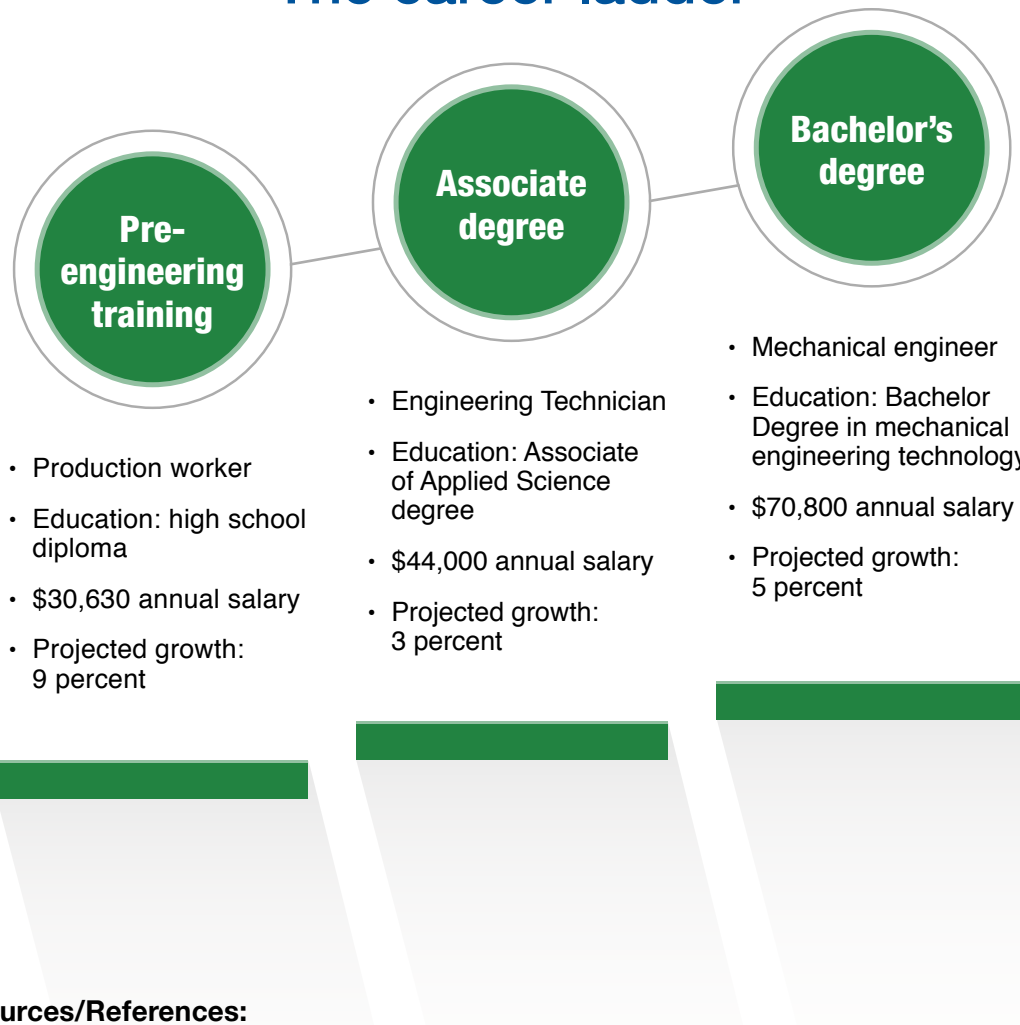


A bachelor's degree is required for entry-level jobs. For advancement, a graduate degree, state licensure and a professional engineer's certification is required.

## Where could I focus or specialize in my career?

- Production worker
- Machinist
- Computer aided design (CAD) technician
- Mechanical engineering technician
- Mechanical engineer
- Engineering manager

## The career ladder



Ohio Means Jobs, Bureau of Labor Statistics – Occupational Outlook Handbook  
 O\*Net Online-Summary Report, Ohio Labor Market Information