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

**Potential job titles:**
- Design engineer
- Product engineer
- Mechanical design engineer
- Process engineer
- Equipment engineer
- Design maintenance engineer
- Systems engineer
- Chassis systems engineer
- Commissioning engineer

**Where you can find jobs:**
- Online job boards
- Career fairs
- Department of Career Services at colleges
- Networking
- Company websites
- Social media

**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

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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

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Postsecondary:

Year 1 1st Semester: Introduction to AutoCAD, Applied Physics, Machining Processes
Year 1 2nd Semester: Materials Processing, Technical Mathematics II, English Composition
Year 2 1st Semester: Introduction to SolidWorks, Fundamentals of Public Speaking, Engineering Mechanics II
Year 2 2nd Semester: Applied Electricity, Fluid Power Technology, Design and Manufacturing Capstone

High School Career-Tech Prep Education Program Courses

High School Courses for Postsecondary Credit (Including Apprenticeship Hours) and the Corresponding Postsecondary Courses

Required Courses

Recommended Electives
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

**Pre-engineering training**

- Production worker
- Education: high school diploma
- $30,630 annual salary
- Projected growth: 9 percent

**Associate degree**

- Engineering Technician
- Education: Associate of Applied Science degree
- $44,000 annual salary
- Projected growth: 3 percent

**Bachelor’s degree**

- Mechanical engineer
- Education: Bachelor Degree in mechanical engineering technology
- $70,800 annual salary
- Projected growth: 5 percent

**Sources/References:**

O*Net Online-Summary Report, Ohio Labor Market Information