

# Mechanical Engineer

## What Do They Do?

Mechanical Engineers research, develop, design, manufacture, maintain and improve all kinds of mechanical devices, components, engines and systems. They also test tools, engines and other equipment or systems, which produce or use power. They may design products or systems such as instruments, engines, controls, robots and automated manufacturing equipment.

Mechanical Engineers work in many industries and their work varies by industry and function. Some specialize in energy systems, automotive design, manufacturing, or plant engineering. They may coordinate operation, maintenance and repair activities to find the best use of machines and systems. Some may evaluate installations and recommend changes to eliminate malfunctions. They also design tools that other engineers need for their work.

## What Do I Have To Do To Be One?

Some courses to take to prepare you for this occupation include: Algebra, Trigonometry, Computer Science, English and Physics. Technical Drawing, Metals and Electronics are also helpful.

A Bachelor of Science in mechanical engineering (BSME) or a related engineering degree is the minimum requirement for most entry-level positions. Some employers prefer a master's degree; others hire only those who have at least two years' experience.

People who work as Mechanical Engineers are usually people who like activities that are scientific and technical in nature or activities involved with machines and other mechanical devices. To become a Mechanical Engineer, you should be able to use reason and logic, work within precise limits or standards of accuracy, apply mathematical principles and understand how drawings/pictures would look as solid objects

## How Much Do They Make?

Salaries of Mechanical Engineers depend on the engineer's experience, skills, job responsibilities and education. The salary also depends on the type, size and location of the employer.

Nationally, the median annual income of all Mechanical Engineers was \$61,048 in 2003. For licensed professional Mechanical Engineers, the median annual income was \$81,998 in early 2004. In Michigan in early 2004, the median annual salary of licensed professional Mechanical Engineers was \$84,095. The average beginning salary in Michigan for a graduate of a major university program in Mechanical Engineering was about \$50,000 per year in 2003.

## What Can I Expect From The Job Market?

Nationally, there were about 208,500 Mechanical Engineers employed in 2002. More than half of the jobs were in manufacturing – mostly in machinery, transportation equipment, computer and electronic products, and fabricated metal products manufacturing industries. Architectural engineering and related services and the Federal Government provided many of the remaining jobs. About 6.8 percent of them were self-employed.

Nationally employment is expected to increase more slowly than the average for all occupations through 2012, but in Michigan employment for Mechanical Engineers is expected to grow as fast as the average for all occupations through the year 2012. There were about 17,350 Mechanical Engineers employed in Michigan in 2002.

The need for Mechanical Engineers in Michigan depends on economic activity – especially in the auto industry. The need will also increase because the industrial machinery and processes in every industry is becoming more complex. The growth of fields such as environmental control, biomechanics, propulsion systems, transportation systems, communications and energy conversion will provide job opportunities for Mechanical Engineers.

For more information on this occupation, click here: [Mechanical Engineer Career Information](#)

## Factoid

Mechanical engineering is one of the broadest of all the engineering disciplines. Mechanical Engineers design, manufacture and test a wide range of components, devices or systems from electric generators to internal combustion engines to refrigeration and air-conditioning equipment to computer-aided design, automation and robotics.

Some courses to take to prepare you for this occupation include: Algebra, Trigonometry, Computer Science, English and Physics. Technical Drawing, Metals and Electronics are also helpful.

Nationally, the median annual income of all Mechanical Engineers was \$61,048 in 2003. For licensed professional Mechanical Engineers, the median annual income was \$81,998 in early 2004.