



CAREER PROFILE

Mechanical Engineer

JOB OUTLOOK³

The job prospects for mechanical engineers vary somewhat based on the industry they want to work on. Overall, employment for mechanical engineers is projected to grow at about the same pace as the national average for all occupations; however, mechanical engineers looking to work in rapidly growing fields like robotics may experience even more employment opportunities. The US Bureau of Labor Statistics predicts particularly strong job prospects for mechanical engineers who want to work in computational design and simulation and recommends that students focus on learning to create various virtual simulations, as that skill will be in high demand.

SALARY RANGE⁵

\$70,000 – \$112,000

WHO ARE THEY?^{1,2}

Mechanical engineering is the study of objects and systems in motion, and it is among the most diverse fields of engineering, touching upon innumerable aspects of our daily life—from the movement of machines to the human body itself. Mechanical engineers are creative and analytical. They're problem-solvers and difference-makers. Virtually every product that helps humankind was at some point touched by a mechanical engineer. They ask questions, design and develop solutions, and constantly test and re-test to ensure the solutions they are building run safely, efficiently, and reliably. Mechanical engineers work across almost every industry you can think of, including health care, energy, transportation, biotechnology, robotics, and more. They solve huge problems, from world hunger to space exploration. At a company like Boeing, you might even get to work on the International Space Station or the NASA docking system!

WHAT DO THEY DO?^{3,4}

Mechanical engineers turn brilliant ideas into reality. They analyze complex problems and figure out how mechanical and thermal devices might help solve them. They build solutions and then test and update those solutions to ensure that the products and services that make it to the consumer will work well and last. They may also oversee the manufacturing of these products and services. At Boeing, mechanical engineers work on creating physics models of how things will work—including work on the International Space Station, NASA's Space Launch System, the Starliner next-generation space capsule, and the NASA docking system! Mechanical engineers design and oversee the manufacturing of a huge breadth of products, from medical devices to refrigeration and cooling systems, and elevators to automobiles.



CAREER PROFILE

Mechanical Engineer

EDUCATION/ TRAINING³

- Bachelor's degree in mechanical engineering or a related STEM field
- Master's degree in mechanical engineering or a related STEM field
- Internships and/or co-ops to gain practical experience

HOW DO I BECOME ONE?³

Mechanical engineers will likely need a bachelor's degree in mechanical engineering or mechanical engineering technology, and more senior positions may require a master's degree in a related field. Mechanical engineering degrees will equip students with skills in mathematics, life and physical sciences, and engineering and design. To prepare for this career, students should concentrate on building the foundations of these skills in high school, taking courses such as algebra, calculus, statistics, biology, physics, and computer science, along with courses like CAD if your school offers them. Internships and co-ops will also be important for those who want to advance in this career. Students interested in mechanical engineering must be creative and have strong listening and problem-solving skills, in addition to proficiency in math and science disciplines.

¹ "What is Mechanical Engineering?" Columbia University. <https://me.columbia.edu/what-Mechanical-engineering>.

² "What is Mechanical Engineering?" Michigan Technological University. <https://www.mtu.edu/mechanical/engineering/>.

³ "Occupational Outlook Handbook." Bureau of Labor Statistics. <https://www.bls.gov/ooh/architecture-and-engineering/mechanical-engineers.htm>.

⁴ "CST-100 Starliner." Boeing. <http://www.boeing.com/space/starliner/>.

⁵ "Occupational Employment Statistics." Bureau of Labor Statistics. <https://www.bls.gov/oes/current/oes172141.htm>.