



# Engineering Manager

## SALARY RANGE<sup>3</sup>

- The median annual wage for all engineering managers was \$149,530 in May 2020. The lowest 10 percent earned less than \$95,310, and the highest 10 percent earned more than \$208,000.
- In May 2020, the median annual wages for engineering managers in the manufacturing industry was \$148,880.

## WHO ARE THEY?

Engineering managers are highly skilled professionals who plan, direct, and coordinate activities in engineering departments of companies. The versatility of engineering managers allows them to engage in activities that are useful to a variety of industries.

Engineering managers are often responsible for developing the overall concept of a new product or for solving technical problems that might prevent the completion of a project. They make sure everything about the production process runs smoothly by deciding on technical goals and producing detailed plans.

Engineering managers spend a great deal of time coordinating the activities of their staff with the activities of other staff or organizations. They often confer with other managers, including those in finance, production, and marketing, as well as with contractors and equipment and materials suppliers.

## WHAT DO THEY DO?<sup>1</sup>

Engineering managers focus on how to get the work done most efficiently, balancing factors such as time, number of workers needed, available technology, actions that workers need to take to create the product without errors, workers' safety, environmental concerns, and project cost.

Engineering managers use their knowledge of engineering to oversee a variety of activities. They must know how to prepare budgets, hire staff, and supervise employees.

They need to develop management control systems to make financial planning and cost analysis more efficient. They propose budgets for projects and programs and determine training and equipment needs. These managers must also select and hire staff and make staff assignments.

Engineering managers supervise the work of their employees, set schedules, and create administrative procedures. They must meet with clients about product specifications, vendors about purchases, management personnel about manufacturing capabilities, and staff about the status of projects. Engineering managers hold prominent positions within their industries.

## HOW DO I BECOME ONE? <sup>1</sup>

Engineering managers typically need considerable work experience as engineers. They usually have experience working on difficult or complex projects, developing designs, solving problems, and making decisions. Before moving up to a management position, they also typically gain experience leading engineering teams.

Managers obtain business management skills by completing a master's degree in engineering management (MEM or MsEM) or technology management (MSTM) or a master's degree in business administration (MBA). Workers can earn their master's degrees before advancing to management positions or earn them while working as managers.

## JOB OUTLOOK <sup>2</sup>

Employment of engineering managers is expected to grow only about 4 percent from 2020 to 2030, slower than the average for all occupations.

Despite limited employment growth, about 14,700 positions for engineering managers come open each year, on average. Most of those openings result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

## EDUCATION/TRAINING

High school students interested in engineering should take classes in mathematics, such as algebra, trigonometry, and calculus; computer science; and sciences, such as chemistry and physics.

There are colleges and universities that offer 5-year or even 6-year cooperative education plans that combine classroom study with practical work, which allows students to gain experience and to finance part of their education. Courses might include statistics, production systems planning, and manufacturing systems design.

A master's degree in engineering management (MEM or MsEM) or technology management (MSTM) or a master's degree in business administration (MBA) can also be helpful to advance in the field. Engineering management programs usually include classes in accounting, engineering economics, financial management, industrial and human resources management, and quality control.

<sup>1</sup> Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Architectural and Engineering Managers, <https://www.bls.gov/ooh/management/architectural-and-engineering-managers.htm>.

<sup>2</sup> Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Architectural and Engineering Managers, <https://www.bls.gov/ooh/management/architectural-and-engineering-managers.htm#tab-4>.

<sup>3</sup> Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Architectural and Engineering Managers, <https://www.bls.gov/ooh/management/architectural-and-engineering-managers.htm#tab-6>.