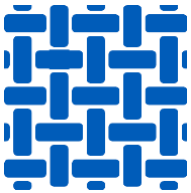


Materials Engineering

CAREER PROFILE

What is materials engineering?



Some would say that materials engineers are the unsung heroes of the modern world. Think of all the things you use every day and all the different materials they are made from. Materials engineers investigate the properties, performance, processing, and structure of existing materials to help make them better and invent completely new materials. They combine mathematics, physics, and chemistry to create the miracle materials needed for the aerospace and automotive industries, biomedical devices, food packaging, manufacturing, computers, and telecommunications.

What do materials engineers do?

Materials engineers can work in almost every industry. As such, their specific roles can be wide-ranging. Here are just a few examples.

- They investigate and select materials for specific applications based on their mechanical, electrical, or other properties.
- They improve existing materials (e.g., to make them stronger, lighter, or more environmentally friendly) or investigate new applications for existing materials.
- They develop and test new materials in line with industry or product requirements.
- They improve and optimize materials production processes to make them safer, cheaper, and more efficient.
- They assess the potential environmental impacts of new materials or new materials production processes.

How do you become a materials engineer?

As with all engineering fields, it is important to take and excel at **science and mathematics** at school. Most materials engineering roles require at least a **materials engineering bachelor's degree**. Many specializations require a master's (or higher) degree.

Here are some general tips for choosing a university or college:

- Make sure the program is **fully accredited** locally and/or internationally.
- Investigate the backgrounds and expertise of the **faculty members** in the materials engineering department.
- Assess the **facilities and resources** provided by the school.
- Consider accredited engineering programs offered by **technical or community colleges** as well.

WHAT IS MATERIALS ENGINEERING?



WHAT DO MATERIALS ENGINEERS DO?



TYPICAL EMPLOYERS

Typical employers include large private companies and research organizations:

- GE HealthCare
- Proctor and Gamble
- Boeing
- Lockheed Martin
- Intel
- Eaton



What are the careers prospects for a materials engineer?

Materials engineers work in many industries, including aerospace, defense, automotive, manufacturing, oil and gas, and pharmaceuticals. The demand for materials engineers is expected to grow by **6%** in the next decade. Average annual salaries are about **US\$105,000**.

Meet some materials engineers

Watch the following videos to meet some inspiring materials engineers.

ELIZABETH MALLY

Elizabeth is a materials engineering working at Terracon in the construction materials department. She makes sure that all the materials used in constructions are safe and fit for purpose.



IRENE REXWINKLE

In this video, Irene explains her role at the Interiors division at Colins Aerospace. If you have ever flown on an airplane before, there is a good chance you have used some of the materials she helped design.



RACHEL MINDELL

Rachel might have one of the coolest jobs in the world! She is a materials engineer with the Mercedes-AMG Petronas F1 team. She designs and tests the materials used in their F1 racing cars.

