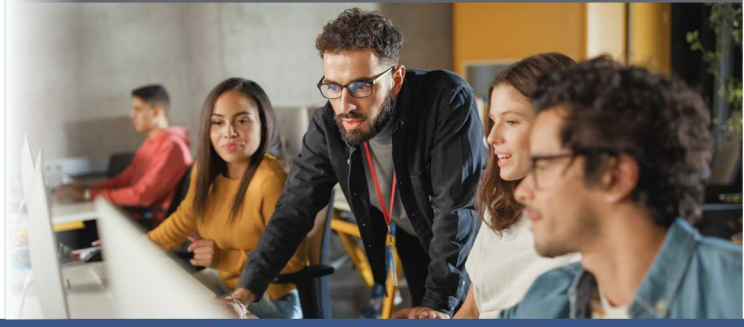
STEM Careers Coalition™



STUDENT ACTIVATION

Engineering Professor

OVERVIEW

Engineering professors are highly communicative and interpersonal professionals who have expert knowledge of one or more fields of engineering. Engineering involves applying scientific concepts and mathematics in the development and improvement of machines, materials, and processes that are used in a variety of industries. Engineering professors work at postsecondary educational institutions such as the University of Sydney instructing students enrolled in engineering courses and degree programs. They also conduct research on engineering topics and publish scholarly writings. They provide students with a wide variety of assistance, ranging from helping struggling students to giving career advice and direction. In addition to conducting their own research, they stay up to date on the latest developments and innovations in the engineering world.

EVALUATE YOUR INTEREST

- ☐ **I enjoy science and math courses and love learning about how science and math concepts can be applied to the real world.**
- ☐ **I see myself as a lifelong learner. I enjoy conducting research, reading, and digging deep into topics that interest me.**
- ☐ **I have a knack for making complicated concepts seem simple, for teaching, and for providing others with support during the learning process.**
- ☐ **I am a natural leader who works well with others. During group activities, people turn to me for help overcoming challenges.**
- ☐ **I am a problem-solver. I can ask smart questions that help others identify problems and issues. I work with others to formulate solutions to problems.**
- ☐ **I am an organized multi-tasker who can keep track of several projects at once, each with many moving parts.**

Engineering Professor

STUDENT ACTIVATION (CONTINUED)

CAREER CONNECTION

How does this career affect me?	What are some other similar careers?	How does this career affect the world?
The field of engineering involves applying science and math concepts in the development of machines, materials, and processes that are used in a wide variety of industries. Engineers design products and processes that improve the quality of goods you use daily while keeping costs down. Engineering professors shape the future of the engineering field by teaching courses at colleges and universities. They conduct and closely follow research studies that keep them up to date on trends and innovations in the field.	**High school teachers** teach courses to students in grades 9–12. **Community college instructors** teach classes at junior or community colleges. **Adjunct professors** teach college and graduate-level courses on a part-time basis. They often have full-time positions outside of the academic world, such as in private industry. **Chemical engineers** apply scientific and mathematical principles to solve problems that involve fuel, drugs, food, and other products. **Civil engineers** design, build, and oversee infrastructure systems such as roads, pipelines, power lines, and sewage systems. **Electrical engineers** design and supervise the production of electronics and electrical devices and equipment. **Industrial engineers** design systems for integrating labor, machines, materials, information, and energy resources to ensure efficient production of a good or service **Mechanical engineers** design machines that produce power, including generators, internal combustion engines, and turbines.	By conducting research studies and training the engineers of tomorrow, engineering professors have a direct impact on the development of high-quality and efficiently produced goods and services in nearly every industry you can imagine. Engineers who design factories, help run plants that harness both traditional and alternative sources of energy, and even plan road and highway systems are trained by engineering professors at institutions such as the University of Sydney. By contributing to the development of innovations they help make goods and services accessible to more and more people.

TAKE ACTION

- ☐ **Join a science-oriented club at school that is involved with using principles of math and science to construct products, conduct outside research, or address community problems. Possibilities include robotics, the recycling club, or the engineering society. Establish, as a personal goal, working to earn the opportunity to occupy a leadership position on a specific project or within the group.**
- ☐ **Select a human activity that is of interest to you, such as production or consumption of a good or resource. In doing so, consider these questions: What resources are needed for this human activity? What production methods and resources help make the good or resource accessible?**
- ☐ **Volunteer to tutor and help younger students with school projects, homework, or research. Once you begin, try different strategies for when asking students questions or explaining important concepts.**