

The Role of Engineering Psychologist in Technical Universities

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Abstract

In this article, the engineering psychology to the problem of formation of readiness professional adaptation of technical university students and the main criteria for formation of readiness for professional adaptation are analyzed. Educational activities that ensure the formation of preparation for effective professional adaptation of a technical university student are provided.

Keywords: psychology, engineering, psychologist, professional, education.

Introduction

Engineering psychology is an applied subfield of psychology that focuses on improving and adapting technology, equipment, and work environments to enhance human behavior and capabilities. It is closely related to the field of ergonomics, which is the science of arranging and designing objects and environments so that people can use them safely and efficiently. Engineering psychologists are interested in understanding the capabilities and limitations of human behavior and developing and adjusting systems to maximize these abilities and prevent errors. They often help design products, workspaces, and human-machine interactions to make them more user-friendly. For those interested in devising systems and technologies that benefit human behaviors and mentalities, a career as an engineering psychologist may be a good choice. Engineering psychologists apply their knowledge of human behaviors to create systems and technologies that improve human functioning. Learning about what engineering psychologists do and how to become one can help you decide if this job is right for you. In this article, we explain what an engineering psychologist does and how to become one, then discuss their typical skills, salaries and job outlook. The U.S. Bureau of Labor Statistics doesn't specify the job outlook for engineering psychologists, but it projects an 8% increase in the outlook for psychologists in general between 2020 and 2030. Since engineering psychologists work in highly specialized roles, the demand for these professionals may be lower than the average for general psychologists because there may be fewer positions in general. Although the number of available positions may have limits, those who qualify within the specialty may be more in-demand because of their level of expertise. Consider meeting others in your specialty to learn more about demand and job outlook.



Tasks of Engineering Psychologists

Engineering psychologists are professionals who work in a specialized branch of psychology that examines how systems and technologies work to improve human performance. They often apply their knowledge to solve real-world problems in technical or specialized institutions, such as medical facilities and aerospace research organizations. These psychologists understand human behaviors and thinking processes and work alongside engineers to develop new ways of enhancing human abilities to improve their performance. For example, an engineering psychologist may work with a software developer to design an interface that reduces the potential for human input errors with intuitive design strategies. Some tasks that an engineering psychologist might perform in this line of work include:

- Analyzing how people interact and use equipment and technology
- Creating safe products and designs intended to minimize human errors
- Designing medical equipment to minimize the risks of medical mistakes
- Exploring ways to make technology more accessible to people with disabilities
- Investigating workplace accidents and searching for ways to prevent accidents from happening again in the future
- Implementing user feedback into future iterations of product designs
- Surveying populations to learn more about user needs or to discover which products appeal to specific demographics

Engineering psychologists are employed in a range of different areas. The private sector, such as businesses and corporations, is the largest area of employment. Other employers might include colleges, universities and government agencies. Engineering psychologists can perform various duties depending on their setting of employment and area of specialty. For example, an engineering psychologist who works to develop the technology used by astronauts on spacecraft may have different daily tasks than an engineering psychologist who designs software interfaces to improve the focus and performance of users with ADHD. Since most engineering psychologists work in research and technology development rather than as clinical practitioners, they often have similar duties to other types of scientists and engineers. The education and training requirements to become an engineering psychologist can vary depending on your area of specialty. While most engineering psychologists need at least a master's degree to qualify for their roles, many require a doctorate. Here are the steps for how to become an engineering psychologist:

1. Earn a bachelor's degree: The first step toward becoming an engineering psychologist is to earn a bachelor's degree. These degrees take four years of full-time study on average to complete. Depending on what area of engineering psychology you wish to work in, you may choose to study topics like psychology, biology, human-computer interaction, computer science, engineering or biotechnology. Studying these topics can provide you with the foundation of knowledge you need to pursue higher education in a more specialized field.
2. Choose an area of specialization: Before pursuing an advanced degree, it's important to consider your preferred specialization carefully. Many engineering psychologists work in highly technical or specialized roles, so choosing the right degree is important for equipping you with the skills you need for the job you want. For example, some universities may offer



special degree programs in engineering psychology, while other professionals in this field may choose to pursue degrees in related fields, like artificial intelligence or ergonomics. Account for your career goals and conduct thorough research into what degree is best suited for your career development plans.

3. Pursue higher education: After determining what kind of engineering psychologist you want to be, research schools that have the degree program you need to qualify for your preferred role. Most master's degree programs take two years on average to complete. You're likely to conduct an independent research project as part of your program with support from an academic supervisor, along with completing coursework in topics related to psychology and engineering. For example, you may take courses in cognition, research methods, statistics, perception, learning and interface design.

Engineering psychologists apply their technical thinking skills to understand relationships between humans and technology. They know how technology works and how it can supplement human cognitive processes. Additionally, they understand how technology usage affects human behaviors. Using their technical knowledge, they can develop new devices that help humans achieve specific results, or develop systems that improve on previous versions based on applied psychology. Engineering psychologists use their understanding of technology to solve human problems. They often work with groups of people to understand their needs so they can develop and improve technologies for them. Additionally, many engineering psychologists collaborate with other researchers when working on projects. Having good writing skills helps researchers communicate through emails and when writing research reports. Effective verbal communication skills allow them to work well in collaborative environments or when presenting research findings at pitch meetings and conferences.

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