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assistant professor of electrical engineering at Southern New Hampshire University (SNHU). "It's the practical use of physics and mathematics to create products that make electrons do useful things." Having worked as an analog and mixed-signal integrated circuit design engineer, Monk brings a wealth of experience to his role at SNHU. He also holds 12 patents and has been published in the field. Electrical engineers design, develop, test and manage the manufacturing of electrical equipment, from motors and navigation systems to power generation equipment and the components of vehicles and personal devices. Electrical engineering is an immensely broad field with job roles in a dizzying array of industries. From electric power generation and distribution to cars to smartphones, electrical engineers are integral parts of thousands of companies. According to the U.S. Bureau of Labor Statistics (BLS), electrical engineers typically: Analyze customer feedback, assess issues and propose effective solutions Collaborate with project managers to ensure projects are completed on time and within budget Conduct precise calculations to establish standards for manufacturing and installation Oversee the production and testing of electrical systems to ensure compliance with specifications and codes "What's common to engineering roles is that you'll end up facing some problem with no known solution. Perhaps something stopped behaving as it usually does, a customer decided to use your product in a new way, you need to improve an existing design or even develop something completely new," said Monk. "There's not a step-by-step procedure that you can follow to address every problem. Instead, engineers use experience, judgment and creativity to move forward." While communication and project management skills are important when applying for electrical engineering jobs, a strong educational and professional foundation is key. Earning an electrical engineering degree may be a great first step to ensuring you are prepared to work in the critical role of an electrical engineer. A master's degree in electrical engineering can also provide further learning and help you to specialize in a specific area, such as electronics development or renewable energy. (A master's degree in electrical engineering currently not available at SNHU.) An MBA in Engineering Management online could help you advance as a leader in the industry. After earning a degree, you can also seek licensure and certification as a professional engineer (PE). Becoming a licensed professional engineer can help you stand out in the applicant pool when becoming an electrical engineer and help you join a growing field that is vital to today's technology-driven world.* "There's a spectrum of focus from more theory to more practical skills, though both are important," said Monk. He also stated the importance of having presentation and communication skills in the electrical engineering field. "It's one thing to come up with a great new idea, it's another to convince your boss to use it," Monk said. Entering the field of electrical engineering means that you may not only play an important role in the development of innovative new technology but also have a profound impact on the electrical systems that we rely on in our everyday lives. Where Do Electrical Engineers Work? With so many varied opportunities available, jobs for electrical engineers are continuing to grow.* In 2023, electrical engineers made a median salary of \$109,010 and the field is expected to grow by 5% through 2032, according to BLS.* The continued fast-paced growth and advancement of technology means that electrical engineers with a strong background in electronics and computer systems will be in demand for research and development of new technologies, according to BLS.* "Electrical engineers can get jobs designing products, testing products, helping customers either from the office or at their site... defining new products," said Monk. It's important for electrical engineers to have well-rounded skills that go beyond the technical work of engineering, including communication, interpersonal and writing skills, according to BLS. Developing Renewable Electrical Power Electrical engineers can work in the development, design and management of the world's electrical power systems. Today, that includes a growing number of jobs in the evolving renewable energy field.* "There are a number of notable areas that continue to evolve in electrical engineering," said Monk. "Electrical engineers have a lot to contribute to recent pushes in clean energy and electric vehicles and the evolution of the electrical grid." A 2023 report from the International Energy Agency (IEA) found that renewables — including sources such as solar, wind and hydropower — are the largest energy source in 57 countries (IEA PDF Source). By 2028, it's expected that 68 countries will have renewable energy as their main power generation and that it will account for 17% of global demand. As demand for renewable energy grows, so, too, do jobs for electrical engineers, who work to design, build and manage electrical power systems.* According to the 2023 U.S. Energy and Employment Jobs Report (USEER) the energy work force added nearly 300,000 jobs from 2021 to 2022, which was 3.8% growth.* Powering Technology Another important role of electrical engineers is in the development of the computers, smart phones and more advanced technology that power your personal and professional lives. "We've seen waves of devices spread to most of the world, first with PCs (personal computers) and now smartphones owned by most people," Monk said. "The continuing improvement of technology will enable new electronic devices." The use of technology has continued to grow and evolve in recent years, creating many unique job opportunities for electrical engineers.* According to a 2023 Pew Research report, more than 97% of people ages 18-49 are smartphone owners. In the professional world, automated technologies continue to boom, from robot-assisted surgery to self-driving cars that may one day transport us around major cities. In fact, according to a 2023 report from the International Federation of Robotics (IFR), the total number of service robots sold for professional use was over 158,000 units. This is a 48% increase from 2021. This growth of digital technology would not be possible without the innovative work of electrical engineers, who design and develop the electrical components that power these machines. Electrical engineering continues to evolve as the world does. Monk said the field is broad and all about leveraging our understanding of electricity for the good of humanity. *Cited job growth projections may not reflect local and/or short-term economic or job conditions and do not guarantee actual job growth. Actual salaries and/or earning potential may be the result of a combination of factors including, but not limited to: years of experience, industry of employment, geographic location, and worker skill. Danielle Gagnon is a freelance writer focused on higher education. She started her career working as an education reporter for a daily newspaper in New Hampshire, where she reported on local schools and education policy. Gagnon served as the communications manager for a private school in Boston, MA before later starting her freelance writing career. Today, she continues to share her passion for education as a writer for Southern New Hampshire University. Connect with her on LinkedIn.