

NUCLEAR ENGINEERING, B.S.

Seven Penn State campuses are scheduled for closure after Spring 2027: DuBois, Fayette, New Kensington, Mont Alto, Shenango, Wilkes-Barre, and York. New students are not being admitted at these campuses.

Begin Campus: Any Penn State Campus

End Campus: University Park

Program Educational Objectives

1. **Professional Practice, Leadership, and Innovation.** Within three to five years of graduation, our Nuclear Engineering B.S. graduates will have:
 - a. Demonstrated technical competence working in the industry, government agencies, or national laboratories in nuclear engineering or related fields, including roles in research and development, design, operations, regulatory compliance, and nuclear policy.
 - b. Demonstrated leadership skills and the ability to innovate in nuclear engineering related fields, including reactor design, radiation protection, and nuclear safety, security, fuel cycle management, and science related fields.
2. **Advanced Education and Lifelong Learning.** Within three to five years of graduation, our Nuclear Engineering B.S. graduates will have:
 - a. Engaged in continuous learning through advanced degrees, certifications, or professional development to stay current in the field and adapt to evolving technology and industry needs.
 - b. Actively participated in professional societies, associations, and networks related to nuclear engineering, fostering collaboration, knowledge exchange, and professional development while advancing their careers.
3. **Ethical and Social Responsibility.** Within three to five years of graduation, our Nuclear Engineering B.S. graduates will have:
 - a. Recognized the ethical and societal implications of their work and contributed positively to the safe, responsible, and sustainable use of nuclear energy and technology.
 - b. Engaged with the community and industry partners to promote the responsible and beneficial use of nuclear energy, contributing to public understanding and trust in nuclear technologies.
 - c. Prioritized safety and environmental responsibility in their work, ensuring the safe operation and management of nuclear facilities and minimizing the impact on the environment.
4. **Effective Communication, Teamwork, and Global Perspective.** Within three to five years of graduation, our Nuclear Engineering B.S. graduates will have:
 - a. Demonstrated effective communication skills, both written and oral, enabling them to articulate technical concepts and solutions to diverse audiences, including peers, stakeholders, and the public, fostering transparency and understanding of nuclear issues.
 - b. Worked collaboratively within multidisciplinary teams, showcasing their ability to function as productive team members, respect diverse perspectives, and contribute to team success.
 - c. Demonstrated appreciation for global issues related to nuclear engineering, including climate change, non-proliferation, international agreements, and the impact of nuclear technology on different regions and communities.

Student Outcomes

Student outcomes describe what students are expected to know and be able to do by the time of graduation. The Nuclear Engineering program is designed to enable students to:

1. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. Communicate effectively with a range of audiences
4. Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. Acquire and apply new knowledge as needed, using appropriate learning strategies.