

NUCLEAR AND RADIOLOGICAL SCIENCES

This degree emphasizes the nuclear sciences rather than nuclear engineering. Students pursue a pre-medical specialization or a pre-medical physics specialization. Any student pursuing this degree must have a selected program, including option area electives, approved in advance by an advisor.

About this Program

- **College:** Herbert Wertheim College of Engineering
- **Degree:** Bachelor of Science
- **Specializations:** Pre-Medical | Pre-Medical Physics
- **Credits for Degree:** 125
- **Additional Information**
- **Related Nuclear Engineering and Science Programs**

To graduate with this major, students must complete all university, college, and major requirements.

Diverse opportunities await graduates of the Department of Nuclear and Radiological Engineering (NRE) because nuclear sciences have and will continue to make major contributions to electricity production, medical diagnostic imaging and therapy, non-destructive testing as well as radiation detection and measurement. These opportunities will continue to grow as we face more challenges in energy production and medicine. For the last three decades, the nuclear industry has contributed over 20% of our country's electricity production, and major advances continue to be made in the development of radiation diagnostics and treatment for medical and industrial applications.

Related Nuclear Engineering and Science Programs

- Combined Degree
- Bachelor of Science in Nuclear Engineering
- Nuclear and Radiological Engineering minor
- Nuclear Radiation and Reactor Analysis certificate

Academic Learning Compact

The major in nuclear and radiological sciences educates students to work professionally in areas related to the control and safe utilization of nuclear energy, radiation and radioactivity.

Before Graduating Students Must

- Pass an assessment by two or more faculty and/or industry practitioners of performance on a major design experience.
- Pass assessment in two or more courses of individual assignments targeted to each learning outcome. Assessment will be provided by the instructor of the course according to department standards.
- Complete requirements for the baccalaureate degree, as determined by faculty.

Students in the Major Will Learn to Student Learning Outcomes (SLOs)

Content

1. Apply knowledge of mathematics, science and engineering for problem solving in engineering.
2. Analyze and interpret experimental data.

Critical Thinking

3. Develop an engineering design to meet specific technical requirements within realistic constraints such as economic, environmental, health and safety and reliability.
4. Foster the need for lifelong learning and the ability to adapt this to engineering practice.

Communication

5. Function effectively on multidisciplinary skills teams.
6. Communicate effectively, using both oral and written presentations, in engineering practice.

Curriculum Map

I = Introduced; R = Reinforced; A = Assessed

Courses	SLO 1	SLO 2	SLO 3	SLO 4	SLO 5	SLO 6
ENU 4001	I					
ENU 4145						R
ENU 4605	R	R	R	R		I
ENU 4612	I	I	I	I		
ENU 4630	A	A	A	A	A	A
ENU 4641/A						

Assessment Types

- Assignments
- Exams
- Projects
- Presentations
- Additional assessment includes the senior exit survey