


College of Engineering
Department of Mechanical Engineering
Minor: Nuclear Engineering
For students entering under UG Catalog 2022-2023 

PURPOSE: The purpose of the Minor in Nuclear Engineering is to (1) provide a more thorough technical foundation in nuclear engineering; and (2) prepare the student for a career in the nuclear industry or for graduate studies in nuclear engineering.

MINOR REQUIREMENTS:

1. Complete the basic requirements for a Bachelor's degree.
2. Complete a minimum of 18 credits of nuclear engineering-related coursework – 12 credits of required courses and 6 credits of elective courses from the attached, approved list.
3. Maintain a 2.0 in-Minor GPA with a minimum grade of C- or better in all courses which count toward the Minor, with the exception of MATH 2214 which must receive a passing grade. No Pass/Fail grades will be permitted.

1. REQUIRED COURSES:

| Course No. | Title | Credits |
|-----------------------------------|---|---------|
| MATH 2214 | Introduction to Differential Equations | 3 |
| NSEG 3145* | Fundamentals of Nuclear Engineering – I (Fall) | 3 |
| NSEG 3146* | Fundamentals of Nuclear Engineering – II (Spring) | 3 |
| NSEG 3604 | Radiation Detection, Protection & Shielding | 3 |
| Section 1 total number of credits | | 12 |

*NSEG 5114, Nuclear Engineering Fundamentals, may be substituted for the NSEG 3145/3146 sequence but then a third elective course will be required for a total of 18 credit hours

2. ELECTIVE COURSES (select two):

| Course No. | Title | Credits |
|-----------------------------------|--------------------------------------|---------|
| NSEG 4204 | Nuclear Fuel Cycle | 3 |
| NSEG 4214 | Nuclear Power Plant Operations | 3 |
| NSEG 4424 | Reactor Thermal Hydraulics | 3 |
| MSE 4384 | Nuclear Materials | 3 |
| NSEG 4974 | Independent Study (3 hours max) | 3 |
| NSEG 4994 | Undergraduate Research (3 hours max) | 3 |
| Section 2 total number of credits | | 6 |

3. PREREQUISITES

| Prerequisites | Course & Number | Course Name |
|---|-----------------|---|
| MATH 2214 | NSEG 3145 | Fundamentals of Nuclear Engineering Part 1 |
| NSEG 3145 | NSEG 3146 | Fundamentals of Nuclear Engineering Part 2 |
| PHYS 2306, coreq: MATH 2214 | NSEG 3604 | Radiation Detection, Protection & Shielding |
| Coreq: NSEG 3146 | NSEG 4204 | Nuclear Fuel Cycle |
| NSEG 3146 | NSEG 4214 | Nuclear Power Plant Operations |
| NSEG 3145 | NSEG 4424 | Reactor Thermal Hydraulics |
| MSE 3044 or ME 3304, MSE 3054 or ESM 3054 or ME 3614 | MSE 4384 | Nuclear Materials |

It is the responsibility of the student to assure that all prerequisites are met prior to registration for any course within the Minor.