The Ohio State University
College of Engineering
Department of Mechanical and Aerospace Engineering
Nuclear Engineering Minor (NUCLREN-MN)

Nuclear Engineering Program
Department of Mechanical and Aerospace Engineering
Scott Lab, 201 W. 19th Ave.
https://mae.osu.edu/nuclear-engineering-minor
Faculty Advisor: Dr. Richard Vasques (vasques.4@osu.edu)

The undergraduate minor in Nuclear Engineering prepares students for successful careers in a variety of specialty areas associated with the application of radiation, radioactive materials, and nuclear fission. Since 1960, our research has been strengthened by the Ohio State University Nuclear Reactor Lab, located just off campus. Students work side-by-side with the faculty on projects for research sponsors such as the U.S. Department of Energy, Nuclear Regulatory Commission, NASA, national laboratories, nuclear power plants and others. Our alumni work for a variety of esteemed organizations including research laboratories, design organizations, nuclear power plants, academic institutions and regulatory organizations.

The undergraduate minor in Nuclear Engineering requires a total of 12 credit hours and a minimum of 24 credit hours of prerequisites. Students should take NUCLREN/MECHENG 4505 prior to taking their elective courses.

**Some courses in this minor may have pre-requisites. Please consult the course bulletin before enrolling in courses.*

Prerequisite courses (5-7 courses, 24-29 CH)

1. Math 1140 (4) AND Math 1141 (4) ***-or-*** Math 1151 (5) ***-or-*** 1156 (5) ***-or-*** 1161.01 (5) or equivalent
2. Math 1152 (5) ***-or-*** 1172 (5) ***-or-*** 4181H (5) or equivalent
3. Math 2153 (4) or above
4. Physics 1248 (4) AND 1249 (3) ***-or-*** Physics 1250(H) (5) ***-or-*** Physics 1260 or equivalent
5. Physics 1251(H) (5) ***-or-*** Physics 1261 or equivalent

Required course (1 course; 3 CH)
NUCLREN/MECHENG 4505 – Introduction to Nuclear Science and Engineering

Elective courses (3 courses; 9 CH)
Choose 3 courses from the list below:
NUCLREN 4506 - Undergraduate Nuclear Engineering Laboratory (3)
NUCLREN/MECHENG 4536 - Nuclear Reactor Systems (3)
NUCLREN 5001 – Interactions of Radiation with Matter (3)
NUCLREN 5002 – Reactor Physics (3)
NUCLREN 5003 – Nuclear Reactor Systems and Analysis (3)
NUCLREN5004 – Materials in Nuclear Systems (3)
NUCLREN 5606 - Radiation Protection and Shielding (3)
NUCLREN 5610 - Reactor Safety (3)
NUCLREN 5735 - Nuclear Power Plant Operations (3)
NUCLREN 5742 - Nuclear Instrumentation, Radiation Sensor and Detection (3)
NUCLREN 5776 - Nuclear Fuel Cycle and Radioactive Waste Management (3)

Nuclear Engineering minor program guidelines

Credit Hours Required: A minimum of 12 credit hrs. 1000 level courses shall not be counted in the minor. At least 6 cr hrs must be upper-level courses as defined by the College of Engineering

Transfer and EM Credit Hours Allowed: A student is permitted to count up to 6 total hours of transfer credit and/or credit by examination.

Overlap with the GE: A student is permitted to overlap up to two courses between the GE and the minor as long as the minor consists of at least 4 courses.

Overlap with the Major and Additional Minor(s)

- The minor must be in a different subject than the major.
- The minor must contain a minimum of 12 hours distinct from the major and/or additional minors.

Grades Required

- Minimum C- for a course to be listed on the minor.
- Minimum 2.00 cumulative GPA for all minor course work.
- Course work graded Pass/Non-Pass cannot count on the minor.
- No more than 3 cr hrs of course work graded Satisfactory/Unsatisfactory may count towards the minor.

X193 Credits No more than 3 cr hrs

Declaring the minor
In order to declare the minor, students must fill out the minor declaration form prior to the filing of the graduation application. Please visit https://mae.osu.edu/nuclear-engineering-minor to access the minor declaration form.

Approval of Coursework
Initial approval of the minor coursework:
Students who complete the minor following the guidelines on this sheet need only verify with their academic advisor that the minor appears complete on the Degree Audit Report. No approval from the Dept. of Mechanical and Aerospace Engineering is required.

Approval for courses not listed on this form to apply to the minor program:
Students must obtain the approval of the Dept. of Mechanical and Aerospace Engineering to apply courses not listed on this form toward the Nuclear Engineering minor. Please email Dr. Richard Vasques.4 to request approval.

College of Arts and Sciences Curriculum and Assessment Services
306 Dulles Hall, 230 Annie & John Glenn Ave.
http://artsandsciences.osu.edu

Received 4/25/12 DH
Updated 12-28-15 BV
Updated 6-9-21 DH
Updated CAA 11-17-21
Updated CAA 01-11-2024
Updated 03-04-2026 RLS
Updated 10-27-2026 MCR