MIN Nuclear Engineering
Minor in Nuclear Engineering

Under Review | Fall 2025

Proposal Information

Workflow Status

In Progress

Refresh **Form Submission, Proposer** collapse

Submitted for Approval | Proposer

- Yvone' Nelson | 11/11/2024 12:01 PM

Department Chair Approval, Nuclear Engineering

Approved | Department Chair

- Charles Fleddermann | 11/11/2024 12:07 PM

Registrar Technical Check Approval, Registrar Technical Check

Approved | Registrar Technical Check

- Michael Raine
- Maggie Sumruld | 12/16/2024 1:59 PM

College/School Approval, School of Engineering

Approved | College or School approver

- Shuang Luan | 7/23/2025 11:10 AM

Library Approval, Main Campus Library

Approved | Library Approval

- Sever Bordeianu | 7/23/2025 11:00 PM

FSCC Member notification, Faculty Senate Curriculum Committee

Notification Sent | Faculty Senate Curriculum Committee Member

- Antoinette Abeyta
- Joe Anderson
- Randi Archuleta
- Laura Belmonte
- Justin Bendell
- Isabella Goss
- Sara Ice
- Megan Jacobs
- Joan Lucas
- Justine Ponce
- Mary Rice
- John Russell
- Jennifer Schneider
- Julia So
- SueNoell Stone
- Jonathan Wheeler

Faculty Senate Curriculum Committee Approval, Faculty Senate Curriculum Committee

Approved | Faculty Senate Curriculum Committee Chair

- Janet Vassilev

FSCC voted to approve the minor in Nuclear Engineering. We added the word preferred before eligibility to make the form more consistent with your intent.

9/12/2025 12:19 PM

- Nicole Capehart

Provost Approval, Main Campus Provost

Approved | Provost

- Pamela Cheek | 9/12/2025 12:40 PM

Faculty Senate Approval, Faculty Senate

Waiting for Approval | Faculty Senate Approval

Nancy Middlebrook
Theresa Sherman

External Review - HED CIP code approval, External Review

Approval | HED CIP code approval

Michael Raine
Anna Gay

Reg. Final Approval/Processing, Registrar

Approval | Registrar final approval

Michael Raine
Maggie Sumruld

Notification, Proposer

Notification | Proposer

Yvone' Nelson

Notification, Faculty Senate Graduate and Professional Committee
Notification | Chair

Robben Brown

New Program Notification, Office of Assessment
Notification | Office of Assessment notification

Julie Sanchez
Elizabeth Kerl
Ean Henninger
Amanda DiMercurio

EMRT notification, EMRT users
Notification | EMRT user

Enrollment Mgt Reporting Team

Notification, LoboTrax Team
Notification | LoboTrax Staff

Sherri DeLeve
Paula Freitag
Hannah Epstein
Allie Martinez
Glenda Johnson

Proposal Information

Sponsoring faculty/staff member
Charles Fleddermann

Sponsoring faculty/staff email
cbe@unm.edu

College
School of Engineering

Department
Nuclear Engineering

Campus
Main Campus

Effective Term and Year

Proposed Effective Term and Year

Fall 2025

Justification

Program Justification

The Biden Administration has joined other nations in a pledge to triple nuclear energy by 2050, and the Department of Energy estimates this expansion in nuclear energy to require approximately 375,000 additional trained technical and non-technical workers to research, design, build, maintain, and operate new nuclear reactors. As one of the newest engineering disciplines, Nuclear Engineering is inherently multidisciplinary, and a foundation in nuclear science and engineering can often provide new opportunities for students in non-nuclear majors. However, nuclear engineering topics require niche knowledge that is not traditionally accessible to students not majoring in Nuclear Engineering. We propose to establish a Nuclear Engineering Minor degree program, which will provide students with a foundation for future employment and/or graduate studies in areas related to nuclear science and technology.

Many of the 20+ US nuclear engineering programs in the US offer a Minor in Nuclear Engineering, indicating that there is an established need for an NE Minor program. Among these, some programs offer both an NE Major and NE Minor, indicating the value of fundamental Nuclear Engineering knowledge for students at universities with an established NE Major program who are not majoring in nuclear engineering. A foundation in Nuclear Engineering will provide these students with greater employment opportunities at nuclear facilities (i.e., mechanical engineers working at nuclear power plants, chemical engineers working at LANL, etc.). Universities offering NE Major and NE Minor programs include:

1. Oregon State University
2. Purdue
3. NC State
4. TAMU
5. University of Florida
6. Georgia Tech

Other universities do not offer an NE Major program, but do host graduate NE programs, thus indicating the utility of an NE Minor for preparing students for graduate studies in Nuclear Engineering. These universities include:

1. Maryland
2. Ohio State University
3. University of Utah
4. University of Missouri
5. Virginia Tech
6. University of South Carolina
7. Virginia Commonwealth University
8. Kansas State University

If successful, this NE Minor program at UNM will provide greater employment opportunities and/or an expedited path to NE graduate studies for non-NE Major students.

Program Category and Level

Program Category	Program Level	Degree, Minor, or Certificate Name
Minor	Undergraduate	Minor in Nuclear Engineering

Is this program also offered online?
No

New program courses

Composition of new program

Existing courses	Revised courses	New Courses	Total Credits
15			15

File Uploads

Document uploads

Associated Kuali Forms

Select any associated course forms that exist

Select any associated program forms that exist

Catalog Information

Program Description
The Nuclear Engineering Minor program is designed to prepare students for careers involving the many beneficial applications of nuclear energy, nuclear technology, and radiological science.

The NE Minor curriculum is designed to provide a foundation of nuclear engineering and radiological science knowledge and the flexibility to specialize in aspects of nuclear science and engineering that align with their individual academic and professional interests. Students begin the NE Minor program by developing fundamental knowledge in radiation interactions with matter, and will then develop specialized knowledge into areas such as radiation detection, nuclear laboratory techniques, nuclear reactor physics, nuclear engineering computational methods, nuclear reactor safety and operation, nuclear criticality safety, radioactive waste management, nuclear materials engineering, and fusion technology.

During the course of their studies, students pursuing an NE Minor will develop their knowledge and laboratory techniques using UNM’s world-class experimental facilities, including the UNM AGN-201M nuclear reactor and radiation detection laboratory.

Preferred eligibility: Students from the following undergraduate programs will be eligible for the NE Minor:

• Chemical and Biological Engineering (CBE)
• Mechanical Engineering (ME)
• Civil Engineering
• Computer Engineering
• Electrical Engineering
• Computer Science
• Mathematics
• Physics
• B.S. Chemistry

Students from other disciplines may also be eligible for the NE Minor program. They should consult with the NE undergraduate advisor to discuss potential pathways or adjustments to meet the program’s prerequisites and requirements.

Prerequisite Considerations: The NE Minor involves a significant prerequisite chain due to the technical depth required in nuclear engineering. This may make the minor a longer and more intensive commitment for students from non-engineering majors. Interested students are encouraged to consult with the NE undergraduate advisor to explore options for fulfilling prerequisites.

Professional Credential/Licensure Program Information

License/Certification associated with program

No

Professional Accrediting Bodies

Minor Program Information

Minor Requirements

- Complete all of the following
  - Complete the following:
    - NUCE2220 - Principles of Radiation Protection (3)
    - NUCE2230 - Principles of Nuclear Engineering (3)
  - Complete at least 1 of the following:
    - NE323L - Radiation Detection and Measurement (4)
    - NE410 - Nuclear Reactor Theory (3)
  - Complete at least 2 of the following:
    - NE315 - Nuclear Engineering Analysis and Calculations (3)
    - NE330 - Nuclear Engineering Science (3)
    - NE353L - Reactor Operations and Licensing (3)
    - NE371 - Nuclear Materials Engineering (3)
    - NE439 - Radioactive Waste Management (3)
    - NE462 - Monte Carlo Techniques for Nuclear Systems (3)
    - NE485 - Fusion Technology (3)
  - NE 499 - Nuclear Criticality Safety (3) may be used to satisfy one of the technical elective requirements above.
  - Course Substitutions: ME and CBE students who have taken NE 371 Materials Science or an equivalent course from their respective departments may be allowed to substitute it for NE 371 in their NE Minor curriculum, with department approval.

Grand Total Credits: 15 - 16

Registrar Office Only

CM Program Code

MIN Nuclear Engineering

BANP

Banner Program Code

Major Code

Online Program Code

Online Major Code

Pre-major Program Code

Pre-major Major Code

CIP Code

Concentration Inheritance

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Catalog

Catalog Activation Date

Notes

MR 11/14/24: hold for updates in Nuclear Eng CCN subject code and numbering.