

◀ MS Nucl Engin - Master of Science in Nuclear Engineering

# CON Rad Protect Engr Health Physics

Under Review | Fall 2025

## Proposal Information

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### Status

Active

### Workflow Status

In Progress

Refresh  **Form Submission, Proposer**

collapse ▼

Submitted for Approval | Proposer

✓ Carol Jimerson | 10/03/2023 8:19 PM

#### Department Chair Pre-Approval, Nuclear Engineering

Approved | Department Chair

✓ Hank Lee | 10/04/2023 1:11 PM

#### Registrar Office Technical Check Approval, Registrar Technical Check

Approved | Registrar Technical Check

— Anna Gay

✓ Michael Raine | 10/04/2023 2:41 PM

#### College/School Dean Approval, School of Engineering

Approved | College or School approver

— Mark Stone

✓ Charles Fleddermann | 4/09/2024 10:50 AM

#### Library Approval, Main Campus Library

Approved | Library Approval

✓ Sever Bordeianu | 4/09/2024 11:12 AM

#### SGPC Approval, Faculty Senate Graduate and Professional Committee

Approved | Chair

✓ Robben Brown

Good morning, the SGPC voted to approve only the name change of the concentration. The proposal as submitted appears like there may be intention to change the program, if so submit a separate Program Change Proposal in Kuali is needed.

9/05/2024 11:07 AM

#### FSCC Member notification, Faculty Senate Curriculum Committee

Notification Sent | Faculty Senate Curriculum Committee Member

- John Russell
- Gabriel Pacyniak
- Jonathan Wheeler
- Min Ro
- Randi Archuleta
- Stephanie Hands
- Laura Soito
- Robben Brown
- Megan Jacobs
- Justine Ponce
- Joe Anderson
- Jennifer Schneider
- Yiliang Zhu
- Nicole Capehart
- Kate Cartwright
- Julia So
- Antoinette Abeyta
- Joseph Poole Jr MSN, RN, CNE
- SueNoell Stone

#### Faculty Senate Curriculum Committee Approval, Faculty Senate Curriculum Committee

Sent Back | Faculty Senate Curriculum Committee Chair

← Janet Vassilev

Sending back so Robben can edit.

9/06/2024 11:07 AM

**SGPC Approval, Faculty Senate Graduate and Professional Committee**

Approved | Chair

✓ Robben Brown

Confirmation from Adam Hecht is that the proposal is only for the concentration name change.

9/06/2024 12:15 PM

**FSCC Member notification, Faculty Senate Curriculum Committee**

Notification Sent | Faculty Senate Curriculum Committee Member

- ✉ John Russell
- ✉ Gabriel Pacyniak
- ✉ Jonathan Wheeler
- ✉ Min Ro
- ✉ Randi Archuleta
- ✉ Stephanie Hands
- ✉ Laura Soito
- ✉ Robben Brown
- ✉ Megan Jacobs
- ✉ Justine Ponce
- ✉ Joe Anderson
- ✉ Jennifer Schneider
- ✉ Yiliang Zhu
- ✉ Nicole Capehart
- ✉ Kate Cartwright
- ✉ Julia So
- ✉ Antoinette Abeyta
- ✉ Joseph Poole Jr MSN, RN, CNE
- ✉ SueNoell Stone

**Faculty Senate Curriculum Committee Approval, Faculty Senate Curriculum Committee**

Approved | Faculty Senate Curriculum Committee Chair

✓ Janet Vassilev

FSCC voted to approve this form on October 18, 2024.

10/18/2024 12:26 PM

**Provost Approval, Main Campus Provost**

Approved | Provost

✓ Pamela Cheek | 10/27/2024 8:49 AM

**Faculty Senate, Faculty Senate**

Waiting for Approval | Faculty Senate Approval

Nancy Middlebrook

**Registrar Office Final Approval/Processing, Registrar**

Approval | Registrar final approval

Michael Raine  
Maggie Sumruld

**Notification, Proposer**

Notification | Proposer

Carol Jimerson

**EMRT notification, EMRT users**

Notification | EMRT user

Enrollment Mgt Reporting Team

**Lobotrax notification, LoboTrax Team**

Notification | LoboTrax Staff

Sherri DeLeve

Paula Freitag  
 Hannah Epstein  
 Allie Martinez  
 Glenda Johnson

**Changes**

- Concentration Title
- Degree Hours
- Degree Requirements
- participants
- Concentration Description
- Proposed Effective Term and Year
- Catalog Activation Date
- Concentration Justification
- Sponsoring faculty/staff member
- Sponsoring faculty/staff email
- Notes

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## Proposal Information

Proposed	Proposed
<b>Sponsoring faculty/staff member</b> ⓘ	<b>Sponsoring faculty/staff email</b>
Adam Hecht	hecht@unm.edu
Existing	Existing
<b>Sponsoring faculty/staff member</b> ⓘ	<b>Sponsoring faculty/staff email</b>

<b>College</b>	<b>Department</b>	<b>Campus</b>
School of Engineering	Nuclear Engineering	Main Campus

## Effective Term and Year

Proposed
<b>Proposed Effective Term and Year</b>
Fall 2025
Existing
<b>Proposed Effective Term and Year</b>
Fall 2006

## Justification

Proposed
<b>Concentration Justification</b>
The concentration is being renamed from Radiation Protection Engineering to Health Physics to be in line with the naming at other universities, which will reduce confusion. There is a recent large push for training in health physics for personnel at LANL and other labs, and we want this to be clear to them. The concentration remains the same otherwise and the courses and practicum are in line with what other universities are doing. Fall 2024 is the proposed effective term and year; however, if the proposal is approved more quickly, it would be greatly appreciated!
Existing

## Concentration Justification

## Associated Forms

Select any associated course forms that exist

Select any associated program forms that exist

## Program Information

## Degree Name

MS Nucl Engin - Master of Science in Nuclear Engineering

## Degree Type

Master of Science

## Program Type

Graduate

## Program Description

No Parent Selected

Proposed Degree Hours	Minimum Major Hours
30 - 34	
Existing Degree Hours	
30 - 33	

## Degree Requirements

- Complete 1 of the following

**Plan I (Thesis)**

- Complete all of the following

- Earn at least 3 credits from the following:

- NE501 - Nuclear Engineering Seminar (1)

- Complete the following:

- NE525 - Methods of Analysis in Chemical, Biological, and Nuclear Engineering (3)

- Complete at least 2 of the following:

- ~~NE511 - Advanced Nuclear Reactor Theory (3)~~
- ~~NE520 - Radiation Interactions and Transport (3)~~
- ~~NE524 - Interaction of Radiation with Matter (3)~~
- ~~NE562 - Monte Carlo Techniques for Nuclear Systems (3)~~
- ~~NE571 - Radiation Damage in Materials (3)~~

- Earn at least 6 credits from the following:

- ~~ME599 - Master's Thesis (1-6)~~
- NE599 - Master's Thesis (1 - 6)**

- Earn at least ~~12~~ **18** credits from the following types of courses:

Electives: ~~Of the 24 credit hours of coursework, a minimum of 9 credit hours is required at the 500-level with a maximum of 3 credit hours in problems courses.~~

- Of the 24 credit hours of coursework required for Plan 1, a minimum of 9 credit hours is required at the 500-level. No more than 3 credit hours in problems courses may count toward the degree.**

**Plan II (Non-Thesis)**

- o Complete all of the following
  - Earn at least 3 credits from the following:
    - NE501—Nuclear Engineering Seminar- (1)
  - Complete the following:
    - NE525—Methods of Analysis in Chemical, Biological, and Nuclear Engineering- (3)
    - NE523L - Environmental Measurements Laboratory (1 - 4)
    - NE524 - Interaction of Radiation with Matter (3)
    - NE528 - External Radiation Dosimetry (3)
    - NE529 - Internal Radiation Dosimetry (3)
    - NE527 - Radiation Biology for Engineers and Scientists (3)
  - Complete at least 2 of the following:
    - NE511—Advanced Nuclear Reactor Theory- (3)
    - NE520—Radiation Interactions and Transport- (3)
    - NE524—Interaction of Radiation with Matter- (3)
    - NE564—Thermal Hydraulics of Nuclear Systems- (3)
    - NE562—Monte Carlo Techniques for Nuclear Systems- (3)
  - Earn at least 6 credits from the following:
    - NE591 - Practicum (3 - 6)
  - Earn at least 24 12 credits from the following types of courses:  
Electives: requires These 33electives credits are hours chosen off from coursework areas including a maximum of 6 interest credits such hours as for waste problems management, courses nuclear and power, or minimum calculational of 12 credit hours in 500-level courses methods. Completion of a Master's project under the direction of a faculty member is also required.
- o Completion of a Master's project (NE 591 - Practicum) under the direction of a faculty member is also required.

#### Plan III (Coursework)

- o Complete all of the following
  - Earn at least 3 credits from the following:
    - NE501 - Nuclear Engineering Seminar (1)
  - Complete the following:
    - NE525 - Methods of Analysis in Chemical, Biological, and Nuclear Engineering (3)
  - Complete at least 2 of the following:
    - NE511—Advanced Nuclear Reactor Theory- (3)
    - NE520—Radiation Interactions and Transport- (3)
    - NE571—Radiation Damage in Materials- (3)
    - NE562—Monte Carlo Techniques for Nuclear Systems- (3)
    - NE571—Radiation Damage in Materials- (3)
  - Earn at least 18 24 credits from the following types of courses:  
Electives: requires 30 credit hours of coursework including a maximum of 6 credit hours of problems courses.
- o Plan III requires 30 credit hours of coursework (no more than 6 credit hours of problems courses may count toward the degree).

**Grand Total Credits: 30 - 34**

## Concentration Information

Proposed
<b>Concentration Title</b>
Health Physics
Existing
<b>Concentration Title</b>
Radiation Protection Engineering

#### Program Level

Graduate

**Concentration Requirements**

- Complete all of the following
  - Earn at least 3 credits from the following:
    - NE523L - Environmental Measurements Laboratory (1 - 4)
  - Complete the following:
    - NE524 - Interaction of Radiation with Matter (3)
    - NE528 - External Radiation Dosimetry (3)
    - NE529 - Internal Radiation Dosimetry (3)
  - Complete at least 1 of the following:
    - NE527 - Radiation Biology for Engineers and Scientists (3)
    - MPHY527 - Radiation Biology for Engineers and Scientists (3)
  - Earn at least 12 credits from the following types of courses:  
Electives. These electives are chosen from areas of interest such as waste management, nuclear power or calculational methods.
  - Earn at least 6 credits from the following:
    - NE591 - Practicum (3 - 6)

**Grand Total Credits: 33****Proposed****Concentration Description**

The department offers a masters-level concentration in Health Physics (HP). This concentration is intended to train people to work in the area of occupational and environmental health physics. The admissions requirements for this concentration differ from those of the traditional program. The prerequisites are: a Bachelor's degree in engineering from an ABET-accredited program OR a Bachelor's degree including a minimum of one year of general college chemistry with laboratory, one year of general college physics with laboratory, one year of differential and integral calculus, a semester of differential equations, and 32 total credit hours of mathematics (calculus level or above) and science.

Students concentrating in the HP program are required to take five core courses in health physics. Another 12 credit hours of electives are required to complete the HP coursework. These electives are chosen from areas of interest such as, waste management, nuclear power or calculational methods. In addition to the 30 credit hours of courses, students must take 6 credit hours of NE 591 Practicum. The practicum involves a semester-long project in the area of health physics usually under the supervision of a certified health physicist. The HP concentration is a Plan II program and does not have a thesis option. After completing the coursework and practicum, the student is awarded a master's degree in Nuclear Engineering with a Health Physics concentration.

**Existing****Concentration Description**

The department offers a masters-level concentration in Radiation Protection Engineering (RPE). This concentration is intended to train people to work in the area of occupational and environmental health physics and leads to a terminal, professional master's degree. The admissions requirements for this concentration differ from those of the traditional program. The prerequisites are: a Bachelor's degree in engineering from an ABET-accredited program OR a Bachelor's degree including a minimum of one year of general college chemistry with laboratory, one year of general college physics with laboratory, one year of differential and integral calculus, a semester of differential equations, and 32 total credit hours of mathematics (calculus level or above) and science.

Students concentrating in the RPE program are required to take five core courses in health physics. Another 12 credit hours of electives are required to complete the RPE coursework. These electives are chosen from areas of interest such as waste management, nuclear power or calculational methods. In addition to the 30 credit hours of courses, students must take 6 credit hours of NE 591 Practicum. The practicum involves a semester-long project in the area of health physics usually under the supervision of a certified health physicist. After completing the coursework and practicum, the student is awarded a master's degree in Nuclear Engineering with a radiation protection engineering (health physics) concentration. Graduates of the RPE concentration do not qualify for automatic admission to the Ph.D. program. They must fulfill all prerequisite requirements for the Ph.D. program before they may be admitted. The Radiation Protection Engineering concentration is a Plan II program and does not have a thesis option.