NUCLEAR MATERIALS ENGINEERING GRADUATE ACADEMIC CERTIFICATE

A graduate certificate in nuclear materials aims to provide students with a foundational understanding of the principles and practices of materials engineering in nuclear context. These course offerings will address the following key components:

- Fundamental nuclear science and engineering,
- Fundamentals of materials engineering,
- Materials degradation and safety in reactor environments, and
- Waste management

To obtain the certificate, students must complete 15 credits from the following courses, nine of which must be at the graduate level.

All required coursework must be completed with a grade of B or better (O-10-b (https://catalog.uidaho.edu/general-requirements-academic-procedures/o-miscellaneous/)).

Program Requirements: The graduate certificate program is designed for part-time study.

Required Coursework:

Code	Title	Hours
Core Courses		
NE 450	Principles of Nuclear Engineering	3
NE 438	Fundamentals of Nuclear Materials	3
or NE 538	Fundamentals of Nuclear Materials	
NE 537	Radiation Effects on Materials	3
Select two from the following:		6
NE 504	Special Topics	
NE 512	Nuclear Components Inspection	
NE 527	Nuclear Material Storage, Transportation, and Disposal	
NE 551	Nuclear Reactor Fuels	
NE 554	Radiation Detection and Shielding	
NE 582	Spent Nuclear Fuel Management and Disposition	
NE 585	Nuclear Fuel Cycles	
NE 536	Electrochemical Engineering	
Total Hours		**15**

Courses to total 15 credits for this certificate
Students should consult with their academic advisor regarding this certificate.

LO#1: Gain knowledge and skills in a wide range of nuclear materials engineering, from nuclear power generation and nuclear materials storage to medical isotope production.

LO#2 - An ability to select, design, and develop materials systems or components for different nuclear engineering applications such as current and advanced nuclear reactors, used fuel storage canisters, and radiation shielding systems using basic materials and nuclear engineering principles while following real-world constraints.

LO#3 - An ability to effectively communicate to clients, engineers, or the general public on topics related to engineering solutions in nuclear engineering, technologies, and/or related fields.

Overall, these learning outcomes demonstrate that students who have completed a certificate in nuclear materials engineering have acquired the knowledge, skills, and abilities necessary to succeed in various fields of the nuclear industry. The students are well-prepared to pursue further education or employment in the nuclear field.