

NUCLEAR ENGINEERING GRADUATE MAJOR (MENG, MS, PHD)

Graduate Areas of Concentration

Application of nuclear techniques, arms control technology, nuclear instrumentation and applications, nuclear medicine, nuclear power generation, nuclear reactor engineering, nuclear systems design and modeling, nuclear waste management, numerical methods for reactor analysis, radiation shielding, radioisotope production, space nuclear power, thermal hydraulics

The School of Nuclear Science and Engineering offers graduate work leading toward the Master of Engineering, Master of Science, and Doctor of Philosophy degrees in Nuclear Engineering.

The Nuclear Engineering graduate degree is designed to prepare students for careers involved with the many beneficial applications of nuclear energy, radiation, and radioactive materials. Nuclear engineering professions are essential to society's well-being since they enable significant public benefits through energy security, national defense, medical health, and industrial competitiveness.

Competitive fellowships and research and teaching assistantships are available to incoming graduate students. The U.S. Department of Energy and National Academy for Nuclear Training support a number of fellowship programs each year. We are one of eight participating universities in the U.S. where students may attend graduate school on the Nuclear Engineering, Health Physics, and Applied Health Physics fellowships sponsored by the U.S. Department of Energy. Each year the National Academy for Nuclear Training also supports fellowships for students entering Nuclear Engineering and Radiation Health Physics at OSU.

World-class facilities are available for the instructional and research programs of the school. These are housed in the OSU Radiation Center and include a TRIGA Mark II nuclear reactor, the Advanced Thermal Hydraulic Research Laboratory, the APEX nuclear safety scaled testing facility, and laboratories specially designed to accommodate radiation and the use of radioactive materials.

For more information, contact the School of Nuclear Science & Engineering, NSE.Office@oregonstate.edu, 541-737-2343.

Major Code: 3270

MEng

Code	Title	Credits
Core Courses ¹		
NSE 535	RADIATION SHIELDING AND EXTERNAL DOSIMETRY	4
NSE 536	ADVANCED RADIATION DETECTION AND MEASUREMENT	4
NSE 553	ADVANCED NUCLEAR REACTOR PHYSICS	3
NSE 568	NUCLEAR REACTOR SAFETY	3
Seminar		
NSE 507	SEMINAR	maximum 3
Electives		
Chosen by student, as approved by major professor		25
Total Hours		45

MS

Code	Title	Credits
Core Courses		
NSE 535	RADIATION SHIELDING AND EXTERNAL DOSIMETRY	4
NSE 536	ADVANCED RADIATION DETECTION AND MEASUREMENT	4
NSE 553	ADVANCED NUCLEAR REACTOR PHYSICS	3
NSE 568	NUCLEAR REACTOR SAFETY	3
Seminar		
NSE 507	SEMINAR	maximum 3
Electives		
Chosen by student, as approved by major professor		19
Thesis		
NSE 503	THESIS	maximum 6
Total Hours		45

Additional Requirements for M.S. and M.Eng. students without prior coursework in Nuclear Engineering

Code	Title	Credits
NSE 515	NUCLEAR RULES AND REGULATIONS	2
NSE 531	RADIOPHYSICS	3
NSE 551	NEUTRONIC ANALYSIS I	3
NSE 552	NEUTRONIC ANALYSIS II	3
NSE 557	NUCLEAR REACTOR LABORATORY	2
NSE 567	NUCLEAR REACTOR THERMAL HYDRAULICS	4
NSE 573	NUCLEAR REACTOR SYSTEMS ANALYSIS	3
Total Credits		20

PhD

Code	Title	Credits
Core Coursework ²		
Chosen by student, as approved by major professor		63
Thesis		
NSE 603	THESIS	minimum 45
Total Hours		108

¹ The MEng degree option provides students the opportunity to pursue advanced-level study without the requirement of completing thesis research. A comprehensive oral exam is taken in lieu of the thesis requirement and course requirements are the same as for the MS degree. These degrees are intended as terminal degrees, not as preparation for a doctorate, and will emphasize job-related knowledge and skills. Although not required, students wishing to pursue a PhD in the future are advised to pursue an MS degree, not the MEng

² The student's principal direction in the course of study comes from the doctoral committee, in which the major professor has final approval.

In addition, the School of Nuclear Science & Engineering requirements include:

1. Passing a written qualifying examination for candidacy
2. On assignment from the student's doctoral committee, taking and passing (B average or higher) such courses as judged desirable by the doctoral committee for satisfactory progress in doctoral research
3. Calling regular (every 6 months recommended, but at least annual) meetings of the Doctoral Committee so that the student's progress can be evaluated and guidance offered
4. Preparing, presenting and defending a written dissertation proposal, i.e., the Preliminary Exam.

The Preliminary Exam should be taken as soon after the qualifying exam as possible

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