

Program in Nuclear Engineering

Fred Gunnerson, Program Director (UI at Idaho Falls, 1776 Science Center Dr., Idaho Falls, ID 83402; phone 208/533-8107; fgunners@if.uidaho.edu; www.if.uidaho.edu/ne). *Faculty:* John Crepeau, Fred Gunnerson, Thomas E. Bitterwolf, Batric Pesic, Vivek Utgikar, Indrajit Charit, Supathorn Pongikaroon, Akira Tokuhiro.

The world's growing need for energy requires a diversity of energy sources, including nuclear energy. Approximately 20% of the electricity used in the U.S. stems from nuclear power. As power plants continue to age there is a need to develop next-generation nuclear reactors and to educate future generations of nuclear scientists and engineers. The demand for nuclear engineers is projected to significantly outpace supply during the next decade. For more information please see our webpage at www.if.uidaho.edu/ne/.

Admissions Requirements and Procedures. The minimum requirements to enter any of the graduate programs in nuclear engineering are: an undergraduate degree in engineering or closely related field from an ABET accredited U.S. program, does not include technical degrees; and a cumulative GPA of 2.8 or better on a 4.0 scale. GRE General Exam is recommended but not required for students with an undergraduate degree from a U.S. ABET accredited program. The GRE General Exam is required for all other applicants. Minimum scores required: Verbal 470, Quantitative 680, Analytical Writing 4.5. TOEFL (minimum score: computer based 249, paper based 605) is required for all students whose primary language is not English. All applicants are required to submit 3 letters of recommendation, a 1-2 page Statement of Career Objectives and a 1-2 page Curriculum Vitae/Resume. Applicants to any of the graduate programs are reviewed on a case-by-case basis by the program's Graduate Committee. Some applicants who have a baccalaureate degree in a field other than engineering may be required to complete certain undergraduate deficiency courses before they will be allowed to take graduate level courses.

Courses

See Part 6 for courses in Nuclear Engineering (NE).

Graduate Academic Certificates Requirements

NUCLEAR CRITICALITY SAFETY ACADEMIC CERTIFICATE

Students who wish to earn an academic certificate in Nuclear Criticality Safety have two possible tracks that can be used to complete this certificate. Students who are majoring within the Program in Nuclear Engineering are encouraged to complete the first track and students who are majoring within the Department of Adult, Career and Technology Education are encouraged to complete the second track. Students interested in this academic certificate should contact the Program Director of Nuclear Engineering.

Note: A grade of 'B' or higher is required in all coursework for this academic certificate.

Track 1:

NE 450 Principles of Nuclear Engineering (3 cr)
NE 535 Nuclear Criticality Safety I (3 cr)
NE 555 Nuclear Criticality Safety II (3 cr)
One of the following (3 cr):
 NE 525 Neutron Transport Theory (3 cr)
 NE 533 Monte Carlo Methods (3 cr)*
 NE 554 Radiation Detection and Shielding (3 cr)
 Upper-Division or Graduate level Mathematics course (3 cr)
Credits to total 12 for this Academic Certificate

*Note: Students are encouraged to complete NE 533 Monte Carlo Methods.

OR

Track 2:

PTTE 512 Fundamental Concepts of Nuclear Science or NE 450 Principles of Nuclear Engineering (3 cr)
PTTE 513 Nuclear Criticality Safety (3 cr)
PTTE 514 Nuclear Safety or NE 470 Nuclear Reactor Safety (3 cr)
PTTE 516 Nuclear Rules and Regulations (3 cr)
Credits to total 12 for this Academic Certificate

Graduate Degree Programs

Candidates must fulfill the requirements of the College of Graduate Studies and of the Nuclear Engineering Committee. See the College of Graduate Studies section of part 4 for the general requirements applicable to each degree. These degrees are offered only through the graduate program at the University of Idaho Center, Idaho Falls. Consult the center's bulletin for specific details.

Master of Science. General M.S. requirements apply.

Master of Engineering. General M.Engr. requirements apply.

Doctor of Philosophy. General Ph.D. requirements apply. Preliminary screening of candidates and program planning for those admitted are essential features of the Ph.D. program. Early in the program, the student must complete a qualifying examination, which will be oral and possibly written. The preliminary examination is taken after most of the course work is completed. This examination is generally limited to the areas of emphasis indicated by the student's dissertation topic and includes a presentation of the dissertation proposal; it will be written and oral. No foreign language is required; however, the program does require a satisfactory level of achievement in mathematics and numerical analyses and in computer programming.