NUCLEAR ENGINEERING (NUCE)

Courses primarily for undergraduates:

NUC E 401: Nuclear Radiation Theory and Engineering
(3-0) Cr. 3. F.
Prereq: PHYS 222, MATH 266 or MATH 267

NUC E 402: Nuclear Reactor Engineering
(3-0) Cr. 3. S.
Prereq: NUC E 401, permission of Nuclear Engineering program director

NUC E 405: Radiation Protection and Shielding
(3-0) Cr. 3.
Prereq: NUC E 401, permission of Nuclear Engineering program director
WWW only. Basic principles and concepts of radiation protection and design: dosimetric units and response functions, hazards of radiation dose, radiation sources, basic methods for dose evaluation, and shielding design techniques for photons and neutrons.

NUC E 410: Nuclear Reactor Theory
(3-0) Cr. 3. F.
Prereq: NUC E 401, permission of Nuclear Engineering program director
WWW only. An introduction to neutron diffusion theory, neutron moderation, conditions for criticality of nuclear reactors.

NUC E 421: Nuclear Criticality Safety
Cr. 3. F.
Prereq: NUC E 401
Nomenclature, theory, and practice of nuclear criticality safety. Review of nuclear criticality accidents, analytical methods used in criticality analysis, review of standards and regulations, and developing criticality safety evaluations.

NUC E 430: Nuclear Energy and Society
(3-0) Cr. 3. Alt. S., offered even-numbered years.
Prereq: NUC E 401
The relationship between nuclear energy and society is examined from the perspective of significant events in the commercial nuclear power industry. Event analysis includes differences and similarities of technologies along with environmental impact. Political, social, media and regulatory responses for each event are discussed along with the impact on future plant design.

NUC E 441: Probabilistic Risk Assessment
(3-0) Cr. 3. S.
Prereq: STAT 305 or equivalent

NUC E 461: Radiation Detection, Measurement and Simulation
(3-0) Cr. 3. S.
Prereq: NUC E 401

NUC E 490: Independent Study
Cr. 1-3. Repeatable, maximum of 3 credits.
Prereq: Junior Classification
Investigation of nuclear engineering topics. Election of course and topic must be approved in advance by supervising faculty.