

Nuclear Engineering (N E)

N E 119S, 219S, 319S, 419S, 519S, 619S, 719S, 819S, 919S Topics in Nuclear Engineering 1-9 Hours

This course is used to record credit the student earns while enrolled at another institution in a program administered by the University's Study Abroad Office. Credit is recorded as assigned by the study abroad adviser in the Cockrell School of Engineering. University credit is awarded for work in an exchange program; it may be counted as coursework taken in residence. Transfer credit is awarded for work in an affiliated studies program. May be repeated for credit when the topics vary.

N E 129S, 229S, 329S, 429S, 529S, 629S, 729S, 829S, 929S Topics in Nuclear Engineering 1-9 Hours

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N E 336P Concepts in Nuclear and Radiation Engineering 3 Hours
Explore different aspects and applications of nuclear and radiation engineering/physics. Examine the history of nuclear development, basic concepts of radiation and radioactivity, radioactive waste management, global warming and the impact of nuclear power plants, industrial applications, health physics, nuclear medicine, job opportunities at power plants, non-proliferation, and nuclear security.

N E 337C Introduction to Nuclear Power Systems 3 Hours
Explore radioactivity, nuclear interactions: fission and fusion, fission reactors, nuclear power systems, nuclear power safety.

N E 337F Nuclear Environmental Protection 3 Hours
Explore ionizing radiation and its interactions with matter and living tissues; radioactive decay kinetics; external and internal dose measurement; transportation through the environment; managing radioactive waste streams; and safeguards.

N E 337G Nuclear Safety and Security 3 Hours
Explore policy and technical aspects related to nuclear safety and security. Evaluate the proliferation of risk from facilities within the nuclear fuel cycle. Examine the criticality conditions for a nuclear assembly and derive parent/daughter decay equations.

N E 361E Nuclear Reactor Operations and Engineering 3 Hours
Explore fission and chain reactions; neutron diffusion and moderation; reactor equations; Fermi Age theory; and multigroup and multiregional analysis.

N E 361F Radiation and Radiation Protection Laboratory 3 Hours
Introduction to the application of radiation and radiation protection instrumentation. Lecture and laboratory topics include personnel monitoring, radiation detection systems, gamma-ray spectroscopy, determination of environmental radiation, counting statistics, gamma and neutron shielding, and air sampling.