

NUCLEAR ENERGY TRACK (NUC)

NUC 301 Introduction to Nuclear Engineering and Reactor Safety (3 Credits)

Engineering & Comp Sci

Importance of nuclear energy to society. Nuclear and radiological engineering. Nuclear energy production. Radioactive waste. Reactor safety

Prereq: PHY 212

NUC 510 Nuclear Reactor Design, Operation and Safety (3 Credits)

Engineering & Comp Sci

Cross-listed with MAE 510

Principles of fission reactor analysis and design; reactor kinetics, operation and control; reactor thermo-fluid-dynamics; reactor safety; reactor accident case studies.

NUC 520 Radiochemistry, Nuclear Fuel Reprocessing and Nonproliferation (3 Credits)

Engineering & Comp Sci

Cross-listed with CEN 520

Radiochemistry for nuclear reactors and nuclear fuel reprocessing; nonproliferation issues through detection and monitoring, nuclear fuel reprocessing and design, waste vitrification and storage facilities, safety issues in nuclear fuel reprocessing.

Prereq: NUC 301

NUC 530 Electric Power Generation and Distribution (3 Credits)

Engineering & Comp Sci

Fundamental principles governing the electro-mechanical power conversion; transformer; generators; introduction to power distribution systems; reliability and safety issues related to power generation and delivery, particularly in nuclear power plants.

NUC 540 Experiential Studies in Nuclear Technology (3 Credits)

Engineering & Comp Sci

Cross-listed with CEN 540

Introduction to experimental methods, procedures and research techniques through projects at participating government facilities, industrial entities or Syracuse University.

Prereq: NUC 301 and (NUC 510 or NUC 520)