THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Reactor Physics

NUCLREN 5002

Credit Hours:
3.00 - 3.00

Course Components:
Lecture

Course Description:
Fundamental neutron physics concepts. Neutron transport and neutron diffusion. One, two, and multi-group diffusion equation. Analytical and numerical solutions of the diffusion equation. Criticality calculations for diffusion. Heterogeneous reactors and homogenization. Introduction to transport solution techniques.

Prerequisites and Co-requisites:
Prereq: 4505 or MechEng 4505, or Grad standing, or permission of instructor.

Course Goals / Objectives:
- Become familiar with the basic physical and engineering concepts important to the design and performance assessment of nuclear reactors
- Develop working skills with the mathematical models used for the approximate studies of nuclear reactor cores
- Develop the capability of applying these models to practical application
- Become familiar with the commercial nuclear power generating systems
- Prepare for the advanced courses in Nuclear Engineering