



**THE OHIO STATE UNIVERSITY**  
COLLEGE OF ENGINEERING

# Reactor Dynamics Laboratory

## NUCLREN 6726

**Credit Hours:**

2.00 - 2.00

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**Course Levels:**

Graduate

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**Course Components:**

Lecture

Lab

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**Course Description:**

Measurement of reactor characteristics and operational parameters using the Ohio State University Research Reactor.

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**Prerequisites and Co-requisites:**

Prereq: 6708 or 705. Prereq or concur: 6725, or Grad standing; or permission of instructor.

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**Course Goals / Objectives:**

- Be familiar with reactor operation and its dynamic behavior
  - Demonstrate through experiments the understanding of reactor characteristics and operational parameters
  - Develop mathematical capability to analysis the reactor dynamics in both frequency and time domain
  - Develop safety culture in working at high radiation environment and be consistent with regulatory requirement
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**Course Topics:**

- Approach-to-critical
  - Control rod calibration by subcritical multiplication, rod drop and positive period
  - Determination of U-235 delayed neutron group parameters
  - Temperature reactivity feedback with fast and slow transients
  - Simulation of the dynamic response of the OSU Research Reactor
  - Reactor transfer function measurement by neutron noise analysis
  - Reactor neutron spectral measurement by activation and unfolding
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**Designation:**

Elective