THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Computational Materials Modeling

MATSCEN 6756

Credit Hours:
2.00 - 2.00

Course Levels:
Graduate (5000-8000 level)

Course Components:
Lecture

Course Description:
Introduction to common computer modeling methods, including hands-on work with emphasis on the atomic and nano-scales.

Prerequisites and Co-requisites:
Prereq: Permission of instructor.

Course Goals / Objectives:
- Create familiarity with state-of-the-art methods to model and simulate materials from the atomic to macroscopic scales
- Provide hands-on experience with using these methods

Course Topics:
- Fundamentals
- Cellular Automata
- Dislocation Dynamics
- Molecular Dynamics
- Phase Field
- Finite Element
- Monte Carlo
- Finite Difference

Designation:
Elective
Required