THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Foundations I: Discrete Structures

CSE 2321

Credit Hours:
3.00

Course Levels:
Undergraduate (1000-5000 level)

Course Components:
Lecture

Course Description:
Propositional and first-order logic; basic proof techniques; graphs, trees; analysis of algorithms; asymptotic analysis; recurrence relations.

Prerequisites and Co-requisites:
Prereq: 2122, 2123, or 2221; and Math 1151, or 1161. Concur (for students with credit for 2221): 2231.

Course Goals / Objectives:
- Be competent with using propositional logic
- Be familiar with first-order predicate logic
- Be familiar with proving by contradiction, by ordinary induction and by strong induction
- Be familiar with using asymptotic notation
- Be familiar with analyzing running time of simple iterative algorithms
- Be familiar with graph theory
- Be exposed to analyzing running time of recursive algorithms
- Be exposed to sorting and searching
- Be exposed to designing graph algorithms

Course Topics:
- Mathematical reasoning
- Analysis of simple algorithms
- Sorting and searching
- Graph theory
- Graph algorithms

Designation:
Required
Elective