

Computational Science and Engineering Track Objectives

This track introduces students to computational methods, systems, and algorithms useful for modeling complex problems in applications of science and engineering.

All major required courses, all track requirements and track selectives, and their pre-requisites, regardless of department, must be completed with a grade of C or better.

Required Courses (5)

Course	Title
Math 26600 or Math 36600	Ordinary Differential Equations
<u>CS 31400</u>	Numerical Methods
<u>CS 38100</u>	Introduction to the Analysis of Algorithms
	Applications - 1 From the Following List
<u>CS 37300</u>	Data Mining and Machine Learning
<u>CS 47300</u>	Web Information Search and Management
<u>CS 47800</u>	Introduction to Bioinformatics
<u>IE 33600</u>	Operations Research - Stochastic Models
<u>ECE 30100</u>	Signals and Systems
	Systems - 1 From the Following List
<u>CS 35200</u>	Compilers: Principles and Practice
<u>CS 35300</u>	Principles of Concurrency and Parallelism
<u>CS 35400</u>	Operating Systems

Note: Any course beyond the one required class from the list of Applications/Systems courses also counts as an elective.

Electives (2)

Course	Title
<u>CS 30700</u>	Software Engineering I

<u>CS 42200</u>	Computer Networks
<u>CS 45600</u>	Programming Languages
<u>CS 47100</u>	Introduction to Artificial Intelligence
<u>CS 48300</u>	Introduction to the Theory of Computation
<u>CS 49000 ROB</u>	Introductions to Robotics
<u>CS 51400</u>	Numerical Analysis
<u>CS 51500</u>	Numerical Linear Algebra
<u>CS 52000</u>	Computational Methods In Optimization
<u>CS 52500</u>	Parallel Computing
<u>IE 33500</u>	Operations Research - Optimization
<u>MA 34100</u>	Foundations of Analysis
<u>MA 44000</u>	Honors Real Analysis I

Notes:

- **At least four (4) of the seven (7) classes for this track must be CS classes.**
- **No course can be counted both for required and elective credit. This is true for all tracks.**

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