

# Algorithmic Foundations Track

## Objectives

The Algorithmic Foundations track gives students a broad education on foundational concepts, tools, and techniques underlying existing and future areas of computer science.

**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 (3)

Course	Title
<b>CS 35200</b>  or <b>CS 35400</b>	Compilers: Principles and Practice  Operating Systems
<b>CS 37300</b>  or <b>CS 47100</b>	Data Mining and Machine Learning  Introduction to Artificial Intelligence
<b><u>CS 38100</u></b>	Introduction to the Analysis of Algorithms

## Electives (3)

Course	Title
<b>CS 31100</b>  and <b>CS 41100</b>	Competitive Programming 2 and 3  The combination of (CS31100 and CS41100) satisfy one elective
<b><u>CS 31400</u></b>	Numerical Methods
<b><u>CS 33400</u></b>	Fundamentals of Computer Graphics
<b><u>CS 35300</u></b>	Principles of Concurrency and Parallelism
<b><u>CS 35500</u></b>	Introduction to Cryptography
<b><u>CS 44800</u></b>	Introduction to Relational Database Systems

<b><u>CS 45600</u></b>	Programming Languages
<b><u>CS 48300</u></b>	Introduction to the Theory of Computation
<b><u>CS 49000</u></b> <b><u>ROB</u></b>	Introductions to Robotics
	One 3-credit computer science course at the 300, 400, 500 level OR an independent study course approved by the track chair OR a math course from the following list; MA 34100, MA 35300, MA 35301, MA 36200, MA 36600, MA 38500, MA 42100, MA 45300

**Note: One of CS 37300 or CS 47100 is needed as a required course; the other cannot be used to satisfy an elective.**

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