# Department of Computer Science

Course Catalog - Fall 2025

## Department Overview:

The Department of Computer Science emphasizes foundational theory, software engineering, and applied machine learning. Students gain hands-on experience in programming, data structures, algorithms, systems, and AI through project-based courses and lab work.

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Course Listings  
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Course Code: CS 101

Course Title: Introduction to Programming

Credits: 3

Description: Introductory programming using Python. Variables, control flow, functions, data visualization with matplotlib and seaborn libraries, numpy for numerical and fast computation and basic  
data structures. Emphasis on problem solving and debugging.

Prerequisites: None

Instructor: Dr. Ada Lovelace

Schedule: Mon/Wed/Fri 10:00 AM - 10:50 AM

Course Code: CS 140

Course Title: Computer Systems Fundamentals

Credits: 3

Description: Overview of computer organization, binary, assembly basics, memory, processes, and I/O.  
Labs include simple assembly and systems experiments.

Prerequisites: None

Instructor: Prof. John von Neumann

Schedule: Tue/Thu 9:30 AM - 10:45 AM

Course Code: CS 240

Course Title: Data Structures and Algorithms

Credits: 3

Description: Design and analysis of data structures (lists, trees, graphs) and algorithms (sorting,  
searching). Emphasis on complexity analysis and implementations in Java.

Prerequisites: CS 101

Instructor: Prof. Alan Turing

Schedule: Tue/Thu 1:00 PM - 2:15 PM

Course Code: CS 260

Course Title: Object-Oriented Programming

Credits: 3

Description: OOP principles, design patterns, and Java programming. Projects cover modular design,  
testing, and API usage.

Prerequisites: CS 101

Instructor: Dr. Grace Hopper

Schedule: Mon/Wed 11:00 AM - 12:15 PM

Course Code: CS 310

Course Title: Operating Systems

Credits: 3

Description: Processes, threads, scheduling, synchronization, memory management, and file systems.  
Includes kernel labs and simulation assignments.

Prerequisites: CS 140

Instructor: Prof. Barbara Liskov

Schedule: Tue/Thu 2:30 PM - 3:45 PM

Course Code: CS 330

Course Title: Database Systems

Credits: 3

Description: Relational models, SQL, transactions, indexing, and basic NoSQL concepts. Lab involves  
building a small DB-backed web app.

Prerequisites: CS 240

Instructor: Dr. Edgar Codd

Schedule: Wed/Fri 1:00 PM - 1:50 PM

Course Code: CS 350

Course Title: Software Engineering

Credits: 3

Description: Software development lifecycle, version control, agile methodologies, testing, and team  
projects delivering a full-stack application.

Prerequisites: CS 260

Instructor: Prof. Margaret Hamilton

Schedule: Mon 2:00 PM - 4:50 PM (Lab)

Course Code: CS 410

Course Title: Machine Learning

Credits: 3

Description: Supervised and unsupervised learning, model evaluation, feature engineering, and deep  
learning basics. Projects use Python and popular ML libraries.

Prerequisites: CS 240

Instructor: Dr. Geoffrey Hinton

Schedule: Tue/Thu 4:00 PM - 5:15 PM

Course Code: CS 420

Course Title: Artificial Intelligence

Credits: 3

Description: Search, knowledge representation, planning, and introductory neural methods. Emphasis  
on problem-solving agents and ethics in AI.

Prerequisites: CS 310

Instructor: Prof. Stuart Russell

Schedule: Wed 3:00 PM - 5:45 PM (Seminar)

Course Code: CS 480

Course Title: Capstone Project in Computer Science

Credits: 3

Description: Team-based capstone integrating knowledge across the curriculum. Students propose,  
design, and implement a software system under faculty supervision.

Prerequisites: CS 350

Instructor: Capstone Faculty Team

Schedule: Fri 10:00 AM - 12:50 PM (Project Studio)