Northwood University
Department of Computer Science
Course Catalog - Fall 2025

Department Overview:
The Department of Computer Science at Northwood University is committed to providing a state-of-the-art education that combines foundational theory with hands-on practice. Our curriculum prepares students for careers in software development, data science, artificial intelligence, cybersecurity, and beyond.

Course Listings

Course Code: CS 101
Course Title: Introduction to Programming
Credits: 3
Description: A foundational course introducing the principles of programming using Python. Topics include variables, data types, control structures (loops, conditionals), functions, and basic data structures like lists and dictionaries. Emphasis is placed on problem-solving and algorithmic thinking. No prior programming experience is required.
Prerequisites: None
Instructor: Professor Ada Lovelace
Schedule: Mon/Wed/Fri 10:00 AM - 10:50 AM

Course Code: CS 240
Course Title: Data Structures and Algorithms
Credits: 3
Description: This course covers the design, analysis, and implementation of fundamental data structures. Topics include stacks, queues, linked lists, trees, hash tables, and graphs. Students will also learn about key algorithms for sorting, searching, and graph traversal. The course will be taught in Java.
Prerequisites: CS 101
Instructor: Professor Alan Turing
Schedule: Tue/Thu 1:00 PM - 2:15 PM

Course Code: CS 360
Course Title: Introduction to Database Systems
Credits: 3
Description: An introduction to the design and implementation of database management systems. Topics include the relational model, SQL (Structured Query Language), database design (ER diagrams, normalization), transaction management, and NoSQL databases. Students will complete a project involving the design and implementation of a small database application.

Prerequisites: CS 240
Instructor: Dr. Edgar Codd
Schedule: Mon/Wed 2:30 PM - 3:45 PM

Course Code: CS 482
Course Title: Applied Machine Learning
Credits: 3
Description: This course provides a practical introduction to machine learning concepts and techniques. Students will learn about supervised learning (regression, classification), unsupervised learning (clustering), and model evaluation. The course emphasizes hands-on application using popular libraries like Scikit-learn and TensorFlow. A significant portion of the course involves a final project.
Prerequisites: CS 240, MATH 210
Instructor: Dr. Yann LeCun
Schedule: Tue/Thu 4:00 PM - 5:15 PM