COMPUTER SCIENCE MINOR
(WEINBERG COLLEGE)

The program offers a minor in computer science for students who wish to develop a strong competence in computer science while majoring in another area.

### Course Title

#### Prerequisites

- **MATH 220-1 & MATH 220-2**
  - Single-Variable Differential Calculus
  - Single-Variable Integral Calculus

- **MATH 218-1 & MATH 218-2 & MATH 218-3**
  - Single-Variable Calculus with Precalculus
  - Single-Variable Calculus with Precalculus
  - Single-Variable Calculus with Precalculus

- **MATH 230-1**
  - Multivariable Differential Calculus

- **MATH 240-0**
  - Linear Algebra

### Minor Requirements (9 units)

- **6 core courses**
  - **COMP_SCI 111-0** Fundamentals of Computer Programming
  - **COMP_SCI 150-0** Fundamentals of Computer Programming 1.5
  - **COMP_SCI 211-0** Fundamentals of Computer Programming II
  - **COMP_SCI 212-0** Mathematical Foundations of Comp Science
  - **COMP_SCI 213-0** Introduction to Computer Systems
  - **COMP_SCI 214-0** Data Structures & Algorithms

- **3 breadth courses in 3 separate breadth areas (see below)**

### Breadth Courses

- **Artificial Intelligence**
  - **Course**
  - **Title**
  - **COMP_SCI 325-0** Artificial Intelligence Programming
  - **COMP_SCI 337-0** Natural Language Processing
  - **COMP_SCI 344-0** Design of Computer Problem Solvers
  - **COMP_SCI 348-0** Introduction to Artificial Intelligence
  - **COMP_SCI 349-0** Machine Learning
  - **COMP_SCI 371-0** Knowledge Representation and Reasoning
  - **COMP_SCI 372-0** Designing and Constructing Models with Multi-Agent Languages

- **Interfaces**
  - **Course**
  - **Title**
  - **COMP_SCI 313-0** Tangible Interaction Design and Learning
  - **COMP_SCI 315-0** Design, Technology, and Research
  - **COMP_SCI 329-0** HCI Studio
  - **COMP_SCI 330-0** Human Computer Interaction
  - **COMP_SCI 331-0** Introduction to Computational Photography
  - **COMP_SCI 333-0** Interactive Information Visualization
  - **COMP_SCI 351-1** Introduction to Computer Graphics
  - **COMP_SCI 352-0** Machine Perception of Music & Audio
  - **COMP_SCI 370-0** Computer Game Design
  - **COMP_SCI 372-0** Designing and Constructing Models with Multi-Agent Languages
  - **COMP_SCI 376-0** Computer Game Design and Development
  - **COMP_SCI 377-0** Game Design Studio
  - **ELEC_ENG 332-0** Introduction to Computer Vision

- **Software Development and Programming Languages**
  - **Course**
  - **Title**
  - **COMP_SCI 310-0** Scalable Software Architectures
  - **COMP_SCI 321-0** Programming Languages
  - **COMP_SCI 338-0** Practicum in Intelligent Information Systems
  - **COMP_SCI 377-0** Game Design Studio
  - **COMP_SCI 392-0** Rapid Prototyping for Software Innovation
  - **COMP_SCI 393-0** Software Construction
  - **COMP_SCI 394-0** Agile Software Development
  - **COMP_SCI 473-1** NUvention: Web - Part 1
  - **COMP_SCI 473-2** NUvention: Web - Part 2

Students should begin the minor before the end of the first quarter of their junior year.

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1 Students without programming experience may want to first take COMP_SCI 110-0 Introduction to Computer Programming, ideally in the Python programming language.