# Computer Science Second Major for ISP Students

The Integrated Science Program is a highly selective program in Weinberg College. Weinberg College students, but not McCormick students, majoring in ISP may complete a limited, second major in computer science through a curriculum tailored specifically to their needs:

## Course Title

### Core courses (same as for stand-alone major)

- COMP SCI 101-0: Computer Science: Concepts, Philosophy, and Connections
- COMP SCI 111-0: Fundamentals of Computer Programming
- 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

Or an additional course from the breadth course lists.

- COMP SCI 335-0: Introduction to the Theory of Computation
- COMP SCI 336-0: Design & Analysis of Algorithms

### Breadth courses (same as for stand-alone major: 5 courses, one from each area, see below)

- Project courses (2 units; projects must be approved by both ISP and CS advisers)
  - COMP SCI 399-0: Projects
  - INTG SCI 398-0: Undergraduate Research

### Breadth Courses

Majors must take one course from each area. Minors must take one course from each of any three areas.

## Theory

### Course Title

- COMP SCI 335-0: Introduction to the Theory of Computation
- COMP SCI 336-0: Design & Analysis of Algorithms

## Systems

### Course Title

- COMP SCI 322-0: Compiler Construction
- COMP SCI 339-0: Introduction to Database Systems
- COMP SCI 340-0: Introduction to Networking
- COMP SCI 343-0: Operating Systems
- COMP SCI 345-0: Distributed Systems
- COMP SCI 350-0: Introduction to Computer Security
- COMP SCI 354-0: Network Penetration & Security
- COMP SCI 440-0: Advanced Networking
- COMP SCI 441-0: Resource Virtualization
- COMP SCI 443-0: Advanced Operating Systems
- COMP SCI 446-0: Kernel and Other Low-level Software Development
- COMP SCI 450-0: Internet Security
- COMP ENG 303-0: Advanced Digital Design
- COMP ENG 346-0: Microprocessor System Design
- COMP ENG 358-0: Introduction to Parallel Computing
- COMP ENG 361-0: Computer Architecture I

## Artificial Intelligence

### Course Title

- COMP SCI 325-1: Artificial Intelligence Programming
- COMP SCI 337-0: Natural Language Processing
- COMP SCI 344-0: Design of Computer Problem Solvers

## Interfaces

### Course Title

- COMP SCI 313-0: Tangible Interaction Design and Learning
- COMP SCI 315-0: Design, Technology, and Research
- COMP SCI 330-0: Human Computer Interaction
- COMP SCI 331-0: Introduction to Computational Photography
- 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 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 321-0: Programming Languages
- COMP SCI 338-0: Practicum in Intelligent Information Systems
- COMP SCI 377-0: Game Design Studio
- 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