COMPUTER SCIENCE SECOND MAJOR FOR ISP STUDENTS

Students must also complete the Undergraduate Registration Requirement (https://catalogs.northwestern.edu/undergraduate/requirements-policies/undergraduate-registration-requirement/) and the degree requirements of their home school.

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

### Core courses

Course | Title
---|---
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

### 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)

Course | Title
---|---
COMP_SCI 399-0 | Projects
or 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 | Computer System 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
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 & Constructing Models with Multi-Agent Language

#### 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 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 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