Computer Science Intro Courses

CSCI 0105 - Algorithmic World

- Overview of the role of computers and algorithms in our lives
- Non-majors course (good for the curious but doesn't count towards the major or minor)

CSCI 0110 - Programming through Simulation

- Exploration of computing through modeling
- Good for students interested in sociology or ecology
- Non-majors course (good for the curious but doesn't count towards the major or minor)

CSCI 0145 - Introduction to Computing [*offered every fall and spring*]

In this course we will provide a broad introductory overview of the discipline of computer science, with no prerequisites or assumed prior knowledge of computers or programming. A significant component of the course is an introduction to algorithmic concepts and to programming using Python; programming assignments will explore algorithmic strategies such as selection, iteration, divide-and-conquer, and recursion, as well as introducing the Python programming language. Additional topics will include: the structure and organization of computers, abstraction as a means of managing complexity, multimedia storage and manipulation, and the question "What is computation?" 3 hr. lect. + 50 min. lab

- Broad overview of computer science
- Good for any students who want to know what computer science is all about
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CSCI 0150 - Computing for the Sciences [*offered every fall and spring*]

In this course we will provide an introduction to the field of computer science geared towards students interested in mathematics and the natural sciences. We will study problem-solving approaches and computational techniques utilized in a variety of domains including biology, chemistry, physics, and engineering. Students will learn how to program in Python and other languages, how to extract information from large data sets, and how to utilize a common technique employed in scientific computation. The course has no prerequisites and assumes no prior experience with programming or computer science. 3 hrs. lect. + 50 min. lab

- A little more depth in specific programming practices, with a focus on data manipulation
- Good for students in fields that deal with a lot of data, such as the various sciences and engineering

Which one should I take if I am interested in being a major?

Whichever has room/ fits in your schedule! Both of them will leave you in a good place to proceed to the 200-level classes and enter the major.

Should I jump to a 200-level course?

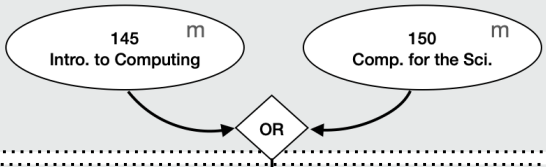
Do you feel comfortable with all, or most of these topics?

- Basic programming concepts in Python (other languages are fine too):
  - Variables, functions, parameters
  - Loops and if-statements
  - Arrays / lists
  - Recursion
  - Data types: int, float, boolean, strings, dictionaries
  - Simple graphics
  - Intro to object-oriented programming
- Additional programming topics (varies somewhat by course):
  - Tuples, sets
  - File I/O, modules
  - Computer architecture, assembly
  - Boolean logic and gates
  - Images and sound
  - Glimpse of other languages, e.g., R or Matlab
- Other topics
  - Binary numbers, data representation
  - Intro to complexity and big-O notation
  - Intro to searching and sorting

Navigating the Computer Science Major

visit go/cswiki for more information

One of…

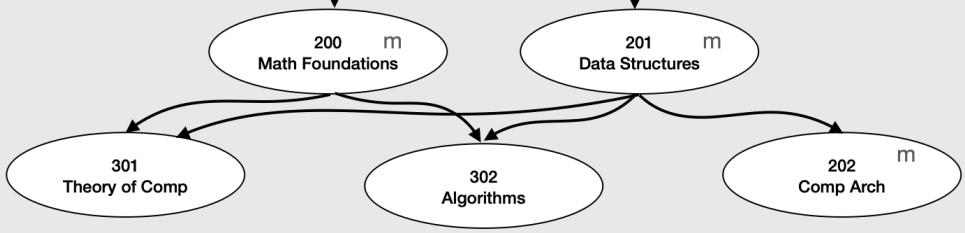


Key

pre-requisite →

minor m

All of…



Electives

Major

Four CSCI electives

One additional Responsible Computing course

Electives are 0303-499 + 0701

One elective can be substituted with MATH 0218 or MATH 228

Minor

Courses marked 'm' above

Two CSCI electives

0301 and 0302 may be used as electives by minors

Courses above 302

Course	Requirements			
	200	201	202	Other
CSCI 0311 Artificial Intelligence	X	X		
CSCI 0312 Software Development	X	X		
CSCI 0313 Programming Languages	X		X	
CSCI 0315 Systems Programming			X	
CSCI 0318 OOP & GUI Application Dev			X	
CSCI 0321 Bioinformatics Algorithms		X		
CSCI 0333 Quantum Computing				MATH 0200
CSCI 0390 Spatial Agent Based Modeling		X		CSCI 0190 or CSCI 0201
CSCI 0401 Computational Complexity				CSCI 0301
CSCI 0414 Advanced Operating Systems				CSCI 0315
CSCI 0416 Parallel Computing			X	
CSCI 0431 Computer Networks				CSCI 0315
CSCI 0433 Compiler Design			X	CSCI 0301
CSCI 0435 Embedded Systems			X	
CSCI 0451 Machine Learning	X	X		MATH 0200
CSCI 0452 Image Processing	X	X		
CSCI 0453 Computer Vision			X	MATH 0200
CSCI 0461 Computer Graphics			X	MATH 0200
CSCI 0465 Information Visualization		X		
CSCI 466 Usable Mobile Interfaces				CSCI 0312
CSCI 0467 Generative Art		X		
CSCI 701 Senior Seminar				approval required
CSCI 0702 Senior Thesis				CSCI 701 and approval
CSCI 1005 Crash Course/ Systems Security			X	approval required
CSCI 1012 Bias, Belonging, Power in Tech				One CSCI course at 100-level
CSCI 1051 Deep Learning	X	X	X	