

# COMPUTER SCIENCE MAJOR (B.S.)

Link to College Core requirement (<http://catalogue.shu.edu/undergraduate/college-arts-sciences/core-curriculum/>).

In addition to meeting the standards and requirements of the College of Arts and Sciences, degree candidates must complete the requirements listed below. All programs are worked out in consultation with a department adviser who may modify the program in view of the students' backgrounds and objectives. All programs must be approved by the department. No more than three internship credits (CSAS 3091 -CSAS 3094 Computer Science Co-Op I) may be used toward the major program in Computer Science.

Code	Title	Hours
<b>Freshman Year</b>		
CSAS 1114 & CSAS 1115	Intro to Program Design I and Intro to Program Design II	6
MATH 1501	Calculus I - Math - Phys Sci	4
MATH 1611	Intro to Discrete Mathematics	3
<b>Sophomore Year</b>		
CSAS 2123 & CSAS 2124	Intro Object-Orient Design I and Intro Object-Orient Design II	6
CSAS 2125	Computer Systems-Assembly Prog	3
CSAS 2126	Data Structures and Algorithms	3
MATH 2111 or MATH 2711	Statistics for Science Majors Intro Probability - Statistics	4
MATH 2813 or MATH 2814	Linear Algebra Intro Linear Algebra Comp Math	3-4
<b>Junior-Senior Year</b>		
CSAS 3111	Operating Systems and Computer Architecture	3
CSAS 3113	Organization of Programming Languages	3
CSAS 4113	Automata Computability and Formal Languages	3
Select five electives from the list below or from the group not chosen: 15		
CSAS 3010	Data Mining	
CSAS 3091 & CSAS 3092	and Independent Study (CSAS 3091-3093 are Computer Science Internship (1,2,3 credits, respectively))	
CSAS 3093	Computer Science Internship	
CSAS 3094	Computer Science Co-Op I	
CSAS 3211	Networks and Networking	
CSAS 4071		
CSAS 4072		
CSAS 4073		
CSAS 4074		
CSAS 4075		
CSAS 4076		
CSAS 4091	Ind Study-Computer Science	
CSAS 4092		
CSAS 4093	Independent Study-Comp Science	
CSAS 4094	Independent Study-Comp Science	
CSAS 4095	Independent Study	

CSAS 4096	Independent Study-Comp Science
CSAS 4115	Theory of Relational Databases
CSAS 4117	Software Engineering
CSAS 4118	Software Engineering II
CSAS 4122	Computer Graphic Visualization
CSAS 4201	Approaches to Big Data
DASC 3000	Data Visualization
DASC 4021	Project in Visual Analytics
PSYC 3214	Cognitive Psychology

**Total Hours** **56-57**

*Note: To graduate with departmental honors in computer science, students must also complete:*

CSAS 4201 Approaches to Big Data-CSAS 4202 Honors Research Project I (6).

## Departmental Honors in Computer Science

Students who wish to graduate with departmental honors in computer science:

- must have a 3.3 GPA in major courses numbered 3000 or above, including MATH courses used to satisfy major requirements,
- a 3.0 over all average GPA, and must have taken at least 60 credits at Seton Hall;
- and must complete the Honors Project sequence (CSAS 4201 Approaches to Big Data-CSAS 4202 Honors Research Project I ), including written and oral presentation of project results.