COMPUTER SCIENCE, B.S.

Learning Outcomes

Upon successful completion of the program of studies for Computer Science, the student will receive a B.S. in Computer Science and will have given evidence of the following outcomes and goals:

- Students will apply mathematical and computer science concepts to solve problems embedded in core assignments throughout the curriculum in the capstone experience.
- Students will analyze and develop accurate and effective computer-based solutions to real-world problems, and produce professional documentation for those solutions.
- Students will develop as computer science professionals by functioning effectively in team environments and demonstrating appropriate collaborative skills and professional ethics.
- Students will critically evaluate complex problems, identify the most appropriate computer-based applications relevant to the issues, and develop logically consistent and effective solutions.

Requirements

To earn this degree, students must successfully complete at least 120 credits, including General Education (https://catalog.georgian.edu/undergraduate/academic-programs/bridge-general-education-program-requirements/) requirements and the major requirements below.

Major Sequence

A minimum of 52 semester hours of computer science and mathematics courses are required for the Bachelor of Science in Computer Science, including:

Code	Title	Credits
Required Courses		
CS123	Computer Programming I	4.0
CS126	Computer Programming II	3.0
CS220	Python Programming	3.0
CS225	Computer Architecture	3.0
CS227	Data Structures	3.0
CS231	Introduction to Database Systems	3.0
CS322	Software Engineering	3.0
CS324	Algorithmic Analysis	3.0
CS410	Operating Systems	3.0
CS414 or CS415	Research Problem in CS or CIS Internship	1.0
CS450	Applications Project	3.0
MA115	Calculus I	4.0
MA116	Calculus II	4.0
MA209	Linear Algebra	3.0
MA210	Discrete Mathematics	3.0
Elective Courses (Choose Two from Among):		**6.0**
CS211	Introduction to Cybersecurity	
CS/MA232	Applied Data Analysis and Modeling	
CS306	Topics in CS or CIS	
CS/MA325	Introduction to Machine Learning	
CS326	Survey of Networks & Telecommunications	
CS327	Computer Network Administration	
CS328	Big Data	
CS329	Artificial Intelligence	
CS/MA350	Data Visualization	
CS433	Numerical Analysis	
MA331	Probability & Statistics I	
Total Credits		**52.0**

It is recommended that Computer Science majors take PH112 Physics in Everyday Life II, which will fulfill the Scientific Reasoning general education requirement.

Degree Map

Course	Title	Credits
First Year		
Fall Semester		
GEN101	Pathway to the Bridge [1]	2.0
EN111	Writing, Research, and Digital Literacy [1]	3.0
CS123	Computer Programming I [1,2]	4.0
MA115	Calculus I [1,2]	4.0
Elective		3.0
	Credits	**16.0**
Spring Semester		
GEN199	WI:Discovering Self in the Universe [1]	3.0
Critical Reading & Analysis, or Scientific Thinking [1]		3.0-4.0
Intercultural Understanding & Intercultural Communication, or Creative Thinking & Expression [1]		3.0
CS126	Computer Programming II [2]	3.0
MA116	Calculus II [1,2]	4.0
	Credits	**16.0-17.0**
Second Year		
Fall Semester		
Critical Reading & Analysis, or Scientific Thinking [1]		3.0-4.0
Understanding Human Behavior & Social Systems [1]		3.0
CS220	Python Programming [2]	3.0
CS227	Data Structures [2]	3.0
MA209	Linear Algebra [2]	3.0
	Credits	**15.0-16.0**
Spring Semester		
Religious Studies [1]		3.0
Intercultural Understanding & Intercultural Communication, or Creative Thinking & Expression [1]		3.0
CS225	Computer Architecture [2]	3.0
CS231	Introduction to Database Systems [2]	3.0
MA210	Discrete Mathematics [2]	3.0
	Credits	**15.0**
Third Year		
Fall Semester		
CS324	Algorithmic Analysis [2]	3.0
CS Elective [2]		3.0
Elective		3.0

Elective		3.0
Elective		3.0
	Credits	**15.0**
Spring Semester		
Select two of the following: [1]		6.0
Ethics		
GEN400	WI:Visioning a Future	
Power & Society		
CS322	Software Engineering [2]	3.0
CS Elective [2]		3.0
Elective		3.0
	Credits	**15.0**
Fourth Year		
Fall Semester		
Select one of the following: [1]		3.0
Ethics		
GEN400	WI:Visioning a Future	
Power & Society		
CS450	Applications Project [2]	3.0
Elective		3.0
Elective		3.0
Elective		3.0
	Credits	**15.0**
Spring Semester		
CS410	Operating Systems [2]	3.0
CS414 or CS415	Research Problem in CS or CIS [2] or Internship	1.0
Elective		3.0
Elective		3.0
Elective		3.0
	Credits	**13.0**
	Total Credits	**120.0-122.0**

[1] General Education
[2] Major