Foreign Language and Culture

COMPUTER SCIENCE (B.S.C.S.)

B.S.C.S. Program Educational Objectives

- 1. Practice in a computer science related profession and/or pursue advanced studies in computer science or related discipline.
- 2. Use effective oral and written communication skills.
- 3. Participate in collaborative environments.
- 4. Become leaders in their chosen field.
- 5. Exhibit a sense of professional ethics and civic responsibility.

B.S.C.S. Student Outcomes

Student outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the knowledge, skills, and behaviors that students acquire as they progress through the program.

- 1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
- Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
- 3. Communicate effectively in a variety of professional contexts.
- Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
- 5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
- 6. Apply computer science theory and software development fundamentals to produce computing-based solutions.

B.S.C.S. Degree Requirements

Code	Title	Hours	
Required Courses			
Minimum 124 semester hours including the following:			
Literature and Writing			
ENG 1310	Writing and Academic Inquiry Seminars	3	
Great Text Requirement		3	
GTX 2301	Intellectual Traditions of the Ancient World : Literature and Thought		
GTX 2302	Medieval Intellectual Traditions: Literature and Thought in Context		
GTX 3343	Great Texts in the Origins of Science		
GTX 4341	Great Texts in Modern Science		
English Literature Requirement		3	
ENG 2301	British Literature		
ENG 2306	World Literature		
ENG 2310	American Literary Cultures (or ENG 2304: American Literature)		
PWR 3300	Technical Writing	3	
Religion			
REL 1310	The Christian Scriptures	3	
REL 1350	The Christian Heritage	3	

Select 3 hours from the Distribution List for E reached if a foreign la	he Foreign Language and Culture CS Majors. Second-level proficiency must b Inguage is chosen.	3 e
Other Requirements		
PSC 1387 or an additi	ional GTX course	3
CSS 1302	Speech for Business and Professional Students	3
Chapel: Two Semeste	rs	0
Lifetime Fitness: Any	two LF 11XX courses	2
Mathematics		
MTH 1321	Calculus I	3
MTH 1322	Calculus II	3
STA 3381	Probability and Statistics	3
Sciences		14-16
Select one group fron	n the following natural or physical sciences:	:
Group 1:		
BIO 1305	Modern Concepts of Bioscience	
& BIO 1105	and Modern Concepts of Bioscience Laboratory	
BIO 1306 & BIO 1106	Modern Concepts of Bioscience, continued and Modern Concepts of Bioscience Laboratory	1
Group 2:		
CHE 1301 & CHE 1101	Basic Principles of Modern Chemistry I and General Chemistry Laboratory I	
CHE 1302 & CHE 1102	Basic Principles of Modern Chemistry II and General Chemistry Laboratory II	
Group 3:		
GEO 1405	The Dynamic Earth	
GEO 1306 & GEO 1106	The Earth Through Time and The Earth Through Time, Laboratory	
Group 4:		
PHY 1408	General Physics for Natural and Behaviora Sciences I	I
PHY 1409	General Physics for Natural and Behaviora Sciences II	I
Or		
PHY 1420	General Physics I	
PHY 1430	General Physics II	
Six to eight additiona or from courses have prerequisites. If a '100 above, the coordination	I hours of science from the courses above one or more of the above courses as 00' level course is chosen from the list ng lab must be taken as well.	
Computer Science Maj	or	
Select one of the follo	owing three options:	67-70
Option A - Compute Concentration)	er Science Major (Computer Science	
Option B - Compute Concentration)	er Science Major (Software Engineering	
Option C - Compute Concentration)	er Science Major (Cybersecurity	
Total Hours		119-124

Option A - Computer Science Major (Computer Science Concentration)

MTH 2311

Linear Algebra

3

Code	Title	Hours		
Required Courses				
CSI 1430	Introduction to Computer Science I with Laboratory	4		
CSI 1440	Introduction to Computer Science II with Laboratory	4		
CSI 2334	Introduction to Computer Systems	3		
CSI 2350	Discrete Structures	3		
CSI 3334	Data Structures	3		
CSI 3335	Database Design and Applications	3		
CSI 3336	Systems Programming	3		
CSI 3344	Introduction to Algorithms	3		
CSI 3372	Software Engineering II	3		
CSI 3439	Computer Architecture	4		
CSI 3471	Software Engineering I	4		
CSI 4321	Data Communications	3		
CSI 4330	Foundations of Computing	3		
CSI 4337	Introduction to Operating Systems	3		
CSI 43C9	Capstone Design Project	3		
CSI 4301	Cultural Impact of the Computer	3		
or PHI 1310	Computer Ethics			
Computer Science Elec	tives			
Select two courses fro	om the following:	6		
CSI 3324	Numerical Methods			
CSI 3338	Computer Organization			
CSI 3342	Principles of Software Design			
CSI 3373	Software Quality Assurance and Testing			
CSI 3374	Software Project Management			
CSI 3V90	Special Topics in Intermediate Computer Science			
CSI 3V95	Internship Experience			
CSI 4111	Cybersecurity Laboratory (3 semesters required for CSI Elective credit)			
CSI 4144	Competitive Learning (3 semesters required for CSI Elective credit)			
CSI 4322	Numerical Analysis			
CSI 4323	Introduction to Cybersecurity			
CSI 4325	Advanced Cybersecurity			
CSI 4328	Numerical Linear Algebra			
CSI 4335	Database Design I			
CSI 4341	Computer Graphics			
CSI 4342	Gaming Platform Frameworks			
CSI 4344	Object-Oriented Development			
CSI 4352	Introduction to Data Mining			
CSI 4V96	Special Topics in Computer Science			
A grade of "C" or better is required in all computer science hours				
counted toward major				
Contemporary Social Is	ssues			
Select 6 hours from the corresponding A&S Distribution List (HIS 1300 included)				

or MTH 2321	Calculus III	
Total Hours		67
Option B - Comp Engineering Cor	outer Science Major (Software Icentration)	
Code	Title	Hours
Computer Science		
CSI 1430	Introduction to Computer Science I with Laboratory	4
CSI 1440	Introduction to Computer Science II with Laboratory	4
CSI 2334	Introduction to Computer Systems	3
CSI 2350	Discrete Structures	3
CSI 3334	Data Structures	3
CSI 3335	Database Design and Applications	3
CSI 3336	Systems Programming	3
CSI 3344	Introduction to Algorithms	3
CSI 3471	Software Engineering I	4
CSI 3372	Software Engineering II	3
CSI 3373	Software Quality Assurance and Testing	3
CSI 3374	Software Project Management	3
CSI 3439	Computer Architecture	4
CSI 4321	Data Communications	3
CSI 4330	Foundations of Computing	3
CSI 4337	Introduction to Operating Systems	3
CSI 43C9	Capstone Design Project	3
CSI 4301	Cultural Impact of the Computer	3
or PHI 1310	Computer Ethics	
A grade of "C" or bet counted toward maje	ter is required in all computer science hours or.	
Technical Elective		
Select one of the following the following the second secon	owing:	3
Any STA course th	nat lists STA 3381 as a prerequisite	
MTH 2321	Calculus III	
MTH 3312	Foundations of Combinatorics and Algebra	
MTH 3370	Mathematical Methods of Operations Research	
Any 4000-level M ⁻ Engineering track	ΓH course not required for Software	
ELC 4330	Introduction to Robotics	
ELC 4353	Image Formation and Processing	
ELC 4438	Embedded Systems Design	
Contemporary Social	lssues	
Select 3 hours from (HIS 1300 included)	the corresponding A&S Distribution List	3
Economics		
ECO 1305	Issues in Economics for Non-Business Majors	3
or ECO 2306	Principles of Microeconomics	
Mathematics		
MTH 2311	Linear Algebra	3

Mathematics

or MTH 2321 Calculus III
Total Hours

70

Option C - Computer Science Major (Cybersecurity Concentration)

Code	Title	Hours
Required Courses		
CSI 1430	Introduction to Computer Science I with Laboratory	4
CSI 1440	Introduction to Computer Science II with Laboratory	4
CSI 2334	Introduction to Computer Systems	3
CSI 2350	Discrete Structures	3
CSI 3334	Data Structures	3
CSI 3335	Database Design and Applications	3
CSI 3336	Systems Programming	3
CSI 3344	Introduction to Algorithms	3
CSI 3471	Software Engineering I	4
CSI 3372	Software Engineering II	3
CSI 4321	Data Communications	3
CSI 4323	Introduction to Cybersecurity	3
CSI 4325	Advanced Cybersecurity	3
CSI 4330	Foundations of Computing	3
CSI 4337	Introduction to Operating Systems	3
CSI 43C9	Capstone Design Project	3
CSI 4301	Cultural Impact of the Computer	3
or PHI 1310	Computer Ethics	
CSI 4111	Cybersecurity Laboratory (three semesters)	3
A grade of "C" or better is required in all computer science hours counted toward major.		
Mathematics		
MTH 2311	Linear Algebra	3
MTH 4312	Cryptology	3
Political Science		
PSC 3355	The Causes of War	3
or PSC 4395	Terrorism	
Contemporary Social Is	ssues	
Select 3 hours from the corresponding A&S Distribution List (HIS 1300 included)		
Total Hours		69