COMPUTER SCIENCE: TECHNICAL APPLICATIONS, B.S.

Program Learning Outcomes

Graduates of the program will be able to:

- write correct and robust software.
- use well-known algorithms and computational techniques to solve problems.
- analyze the interaction between hardware and software.
- apply their technical knowledge and critical thinking to solve problems.
- speak about their work with precision, clarity and organization.
- write about their work with precision, clarity and organization.
- identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand.
- collaborate effectively in teams.
- understand and create arguments supported by quantitative evidence.
- understand the professional, ethical, and social issues and responsibilities with the implementation and use of technology.

Code	Title	Units
Lower-Division Requirements		
CSC 1043 and CSC 1043L	Introduction to Computer Programming and Introduction to Computer Programming Lab	3
CSC 1054 and CSC 1054L	Objects and Elementary Data Structures and Objects and Elementary Data Structures Lab	4
CSC 2054 and CSC 2054L	Data Structures and Algorithms and Data Structures and Algorithms Lab	4
MTH 1064 and MTH 1064L	Calculus I (FE) and Calculus I Lab (FE)	4
MTH 1074 and MTH 1074L	Calculus II and Calculus II Lab	4
MTH 2003	Introduction to Statistics [1]	3
MTH 2033	Linear Algebra	3
Upper-Division Requirements		
CSC 3014	Operating Systems	4
CSC 3023	Software Engineering	3
CSC 3094	Programming Languages	4
CSC 4054	Computer Architecture and Assembly Language	4
CSC 4081	Senior Seminar in Computer Science	1
CSC 4093	Software Project	3
ISS 3073	Networking and Security	3
ISS 4014	Data Base Systems and Web Integration	4
MTH 3043	Discrete Mathematics	3
Choose one (1) sequence from the following:		2-3
CSC 4102 and CSC 4121	Independent Research in Computer Science I and Independent Research in Computer Science II	
CSC 4133	Service Learning in Computer Science	
HON 4098 and HON 4099	Honors Project I and Honors Project II	
ISS 4072	Internship in Information Systems [2]	
Elective Courses		
Choose five (5) or six (6) additional units from the following: [2,3]		5-6
CSC 3003	Python and UNIX	
CSC 3011	Machine Learning and Multivariate Modeling in R	
CSC 3021	Computational Tools	
CSC 3031	Data Visualization and Communication with R	
CSC 3102	Security+ Exam Preparation	
CSC 3112	Network+ Exam Preparation	
CSC 4012	Topics in Computer Science	
CSC 4091	Independent Studies in Computer Science	
CSC 4102	Independent Research in Computer Science I	
CSC 4121	Independent Research in Computer Science II	
CSC 4133	Service Learning in Computer Science	
HON 4098	Honors Project I	
HON 4099	Honors Project II	
ISS 3042	Project Management and Quality Assurance	
ISS 3092	Topics in Cyber Security	
ISS 4003	Information and Computer Security	
ISS 4012	Topics in Information Security	
ISS 4072	Internship in Information Systems	
MTH 2074	Calculus III	
MTH 3073	Mathematical Modeling	
MTH 4162	Project for Data Analytics Minors I	
MTH 4171	Project for Data Analytics Minors II	
Total Units		**61-63**

1 MTH 3063 or MTH 3083 may substitute for MTH 2003.
2 Six (6) elective units required if ISS 4072 is chosen.
3 An elective course may not count as both an upper-division requirement and a required "additional elective."