

COMPUTER SCIENCE: SOFTWARE ENGINEERING, 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 (GE) and Calculus I Lab (GE) ¹ | 4 |
| MTH 1074 and MTH 1074L | Calculus II and Calculus II Lab | 4 |
| MTH 2003 | Introduction to Statistics ² | 3 |
| Upper-Division Requirements | | |
| BUS 3013 or COM 3040 | Business Communications or Organizational Communication | 3 |
| 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 3042 | Project Management and Quality Assurance | 2 |
| 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 | |

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| HON 4098 and HON 4099 | Honors Project I and Honors Project II | |
| ISS 4072 | Internship in Information Systems ³ | |
| Elective Courses | | |
| Choose six (6) to seven (7) additional units from the following: ³ 6-7 | | |
| 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 3073 | Networking and Security | |
| 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 2033 | Linear Algebra | |
| MTH 2074 | Calculus III | |
| MTH 4162 | Project for Data Analytics Minors I | |
| MTH 4171 | Project for Data Analytics Minors II | |
| Total Units | | 61-63 |

¹ MTH 1044 may substitute for MTH 1064.

² MTH 3063 or MTH 3083 may substitute for MTH 2003.

³ Seven (7) units required if ISS 4072 chosen from sequence above.

Total: 59 Units Without GE