Bachelor of Science in Computer Science

Computer Science with a Major in Secondary **Computer Science Education (6-12) (BSCS)**

Degree Program Guide

Course

| Freshman Fall ENGL 110C English Composition (Grade of C or better required) Select one of the following: CS 151 Introduction to Programming with Java or Introduction to Programming with Python Human Creativity Literature STEM 101 Step 1 – Inquiry Approaches to Teaching STEM Credit Hours Spring ENGL 211C or ENGL 231C (Grade of C or better required) CS 251 Programming with Java CS 252 Introduction to Unix for Programmers Interpreting the Past Human Behavior STEM 102 Step 2 - Inquiry Based STEM Lesson Design Credit Hours Sophomore Fall MATH 211 Calculus I CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education Credit Hours | Course | Title | Credit Hours |
|--|--|---------------------------------|--------------|
| ENGL 110C English Composition (Grade of C or better required) Select one of the following: CS 151 or CS 153 Introduction to Programming with Java or Introduction to Programming with Python Human Creativity Literature STEM 101 Step 1 – Inquiry Approaches to Teaching STEM Credit Hours Spring ENGL 211C or ENGL 231C (Grade of C or better required) CS 251 Programming with Java CS 252 Introduction to Unix for Programmers Interpreting the Past Human Behavior STEM 102 Step 2 - Inquiry Based STEM Lesson Design Credit Hours Sophomore Fall MATH 211 Calculus I CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | Freshman | | |
| Select one of the following: CS 151 or CS 153 | Fall | | |
| CS 151 or CS 153 with Java or Introduction to Programming with Java or Introduction to Programming with Python Human Creativity Literature STEM 101 Step 1 – Inquiry Approaches to Teaching STEM Credit Hours Spring ENGL 211C or ENGL 231C (Grade of C or better required) CS 251 Programming with Java CS 252 Introduction to Unix for Programmers Interpreting the Past Human Behavior STEM 102 Step 2 - Inquiry Based STEM Lesson Design Credit Hours Sophomore Fall MATH 211 Calculus I CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM 201 Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | ENGL 110C | | 3 |
| or CS 153 with Java or Introduction to Programming with Python Human Creativity Literature STEM 101 Step 1 – Inquiry Approaches to Teaching STEM Credit Hours Spring ENGL 211C or ENGL 231C (Grade of C or better required) CS 251 Programming with Java CS 252 Introduction to Unix for Programmers Interpreting the Past Human Behavior STEM 102 Step 2 - Inquiry Based STEM Lesson Design Credit Hours Sophomore Fall MATH 211 Calculus I CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | Select one of the following: | | 4 |
| Literature STEM 101 Step 1 – Inquiry Approaches to Teaching STEM Credit Hours Spring ENGL 211C or ENGL 231C (Grade of C or better required) CS 251 Programming with Java CS 252 Introduction to Unix for Programmers Interpreting the Past Human Behavior STEM 102 Step 2 - Inquiry Based STEM Lesson Design Credit Hours Sophomore Fall MATH 211 Calculus I CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | | with Java or Introduction to | |
| STEM 101 Step 1 – Inquiry Approaches to Teaching STEM Credit Hours Spring ENGL 211C or ENGL 231C (Grade of C or better required) CS 251 Programming with Java CS 252 Introduction to Unix for Programmers Interpreting the Past Human Behavior STEM 102 Step 2 - Inquiry Based STEM Lesson Design Credit Hours Sophomore Fall MATH 211 Calculus I CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | Human Creativity | | 3 |
| Credit Hours Spring ENGL 211C or ENGL 231C (Grade of C or better required) CS 251 Programming with Java CS 252 Introduction to Unix for Programmers Interpreting the Past Human Behavior STEM 102 Step 2 - Inquiry Based STEM Lesson Design Credit Hours Sophomore Fall MATH 211 Calculus I CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | Literature | | 3 |
| ENGL 211C or ENGL 231C (Grade of C or better required) CS 251 Programming with Java CS 252 Introduction to Unix for Programmers Interpreting the Past Human Behavior STEM 102 Step 2 - Inquiry Based STEM Lesson Design Credit Hours Sophomore Fall MATH 211 Calculus I CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | STEM 101 | | 1 |
| ENGL 211C or ENGL 231C (Grade of C or better required) CS 251 Programming with Java CS 252 Introduction to Unix for Programmers Interpreting the Past Human Behavior STEM 102 Step 2 - Inquiry Based STEM Lesson Design Credit Hours Sophomore Fall MATH 211 Calculus I CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | | Credit Hours | 14 |
| CS 251 Programming with Java CS 252 Introduction to Unix for Programmers Interpreting the Past Human Behavior STEM 102 Step 2 - Inquiry Based STEM Lesson Design Credit Hours Sophomore Fall MATH 211 Calculus I CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C+++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | Spring | | |
| CS 252 Introduction to Unix for Programmers Interpreting the Past Human Behavior STEM 102 Step 2 - Inquiry Based STEM Lesson Design Credit Hours Sophomore Fall MATH 211 Calculus I CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | ENGL 211C or ENGL 231C | (Grade of C or better required) | 3 |
| Interpreting the Past Human Behavior STEM 102 Step 2 - Inquiry Based STEM Lesson Design Credit Hours Sophomore Fall MATH 211 Calculus I CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | CS 251 | Programming with Java | 4 |
| Human Behavior STEM 102 Step 2 - Inquiry Based STEM Lesson Design Credit Hours Sophomore Fall MATH 211 Calculus I CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | CS 252 | | 1 |
| STEM 102 Step 2 - Inquiry Based STEM Lesson Design Credit Hours Sophomore Fall MATH 211 Calculus I CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | Interpreting the Past | | 3 |
| Credit Hours Sophomore Fall MATH 211 Calculus I CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | Human Behavior | | 3 |
| Fall MATH 211 Calculus I CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | STEM 102 | | 1 |
| Fall MATH 211 Calculus I CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | | Credit Hours | 15 |
| MATH 211 CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | Sophomore | | |
| CS 170 Introduction to Computer Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | Fall | | |
| Architecture I Nature of Science I (Must be in sequence) Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | MATH 211 | Calculus I | 4 |
| Oral Communication: COMM 101R STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | CS 170 | | 3 |
| STEM 201 Knowing and Learning in STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | Nature of Science I (Must be | in sequence) | 4 |
| STEM Education Credit Hours Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | Oral Communication: COMM | 101R | 3 |
| Spring MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | STEM 201 | | 3 |
| MATH 212 Calculus II CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | | Credit Hours | 17 |
| CS 260 C++ for Programmers Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | Spring | | |
| Nature of Science II (Must be in sequence) Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | MATH 212 | Calculus II | 4 |
| Information Literacy and Research: CS 121G or CS 202G STEM 202 Classroom Interactions in STEM Education | CS 260 | C++ for Programmers | 1 |
| STEM 202 Classroom Interactions in STEM Education | Nature of Science II (Must be in sequence) | | 4 |
| STEM Education | Information Literacy and Res | earch: CS 121G or CS 202G | 3 |
| Credit Hours | STEM 202 | | 3 |
| | | Credit Hours | 15 |

| Fall | | |
|----------|-----------------------------|---|
| MATH 316 | Introductory Linear Algebra | 3 |
| CS 300T | Computers in Society | 3 |

Junior

Credit Hours

| MATH 316 | Introductory Linear Algebra | 3 |
|---------------------------|---|-----|
| CS 300T | Computers in Society | 3 |
| CS 350 | Introduction to Software Engineering | 3 |
| STEM 401 | Project Based Instruction in STEM Education | 3 |
| Philosophy and Ethics | | 3 |
| | Credit Hours | 15 |
| Spring | | |
| CS 330 | Object-Oriented Design and Programming | 3 |
| CS 361 | Data Structures and Algorithms | 3 |
| CS 381 | Introduction to Discrete Structures | 3 |
| STAT 330 | An Introduction to Probability and Statistics | 3 |
| STEM 402 | Perspectives on STEM | 3 |
| | Credit Hours | 15 |
| Senior | | |
| Fall | | |
| CS 355 | Principles of Programming Languages | 3 |
| CS 432 | Web Science | 3 |
| CS 462 | Cybersecurity Fundamentals | 3 |
| CS 468W | Research Methods in Mathematics and Sciences | 3 |
| CS 471 | Operating Systems | 3 |
| | Credit Hours | 15 |
| Spring | | |
| STEM 485 | Apprentice Teaching | 9 |
| CS Upper-Level Elective * | | 3 |
| Elective | | 2 |
| | Credit Hours | 14 |
| | Total Credit Hours | 120 |

Excluding CS 315

Language and Culture I & II may be met in high school and is not included in this four-year plan. Please see requirement details.