

MAJOR IN COMPUTER SCIENCE, COMPUTER SCIENCE EDUCATION CONCENTRATION

To prepare for first semester: The curriculum for the Computer Science major assumes students enter college prepared to take calculus. Entering students who are not prepared to take calculus will need to fulfill pre-calculus requirements in the first semester. All students must maintain a C (2.000) or better in CO 150 and in all CS, DSCI, MATH, and STAT courses which are required for graduation.⁴

Major Completion Map

Distinctive Requirements for Degree Program:

Freshman

| Semester 1 | Critical | Recommended | AUCC | Credits |
|--|----------|-------------|------|---------|
| CO 150 College Composition (GT-CO2) | X | | 1A | 3 |
| First course in Group A, B, or C (See options on Concentration Requirements Tab) | X | | 3B | 3 |
| Department Approved Science (See list on Concentration Requirements Tab) | X | | 3A | 4 |
| 1C (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#aucc) | X | | 1C | 3 |
| Elective | | X | | 1 |
| MATH 124 and MATH 126 may be necessary for some students to fulfill pre-calculus requirements. | X | | | |

Total Credits **14**

| Semester 2 | Critical | Recommended | AUCC | Credits |
|---|----------|-------------|------|---------|
| CS 201/PHIL 201 Ethical Computing Systems (GT-AH3) | X | | 3B | 3 |
| MATH 156 or 160 Mathematics for Computational Science I (GT-MA1) Calculus for Physical Scientists I (GT-MA1) | X | | 1B | 4 |
| Remaining course(s) from Group A, B, or C (See options on Concentration Requirements Tab) | X | | | 2-6 |
| Department Approved Science with Lab (See list on Concentration Requirements Tab) | X | | 3A | 3 |
| Electives | | X | | 0-4 |
| CO 150 must be completed by the end of Semester 2 with a grade of C or better. | X | | | |

Total Credits **16**

Sophomore

| Semester 3 | Critical | Recommended | AUCC | Credits |
|---|----------|-------------|------|---------|
| CS 165 CS2–Data Structures | X | | | 4 |
| CS 220 Discrete Structures and the Applications | X | | | 4 |
| EDUC 275 Schools, Society, and Self (GT-SS3) | X | | 3C | 3 |
| Select one course from the following: | X | | | 1-3 |
| STAT 301 Introduction to Applied Statistical Methods | | | | |
| STAT 302A Statistics Supplement: General Applications | | | | |
| STAT 307 Introduction to Biostatistics | | | | |
| STAT 315 Intro to Theory and Practice of Statistics | | | | |
| Electives | | X | | 0-2 |

Total Credits **14**

| Semester 4 | Critical | Recommended | AUCC | Credits |
|--------------------------------------|----------|-------------|------|---------|
| EDUC 340 Literacy and the Learner | X | | | 3 |
| Select one group from the following: | X | | | 4-5 |
| Group A | | | | |
| CS 214 Software Development | | | | |

| | | | | | |
|---|---|-----------------|--------------------|-------------|----------------|
| CT 301 | C++ Fundamentals | | | | |
| Group B | | | | | |
| CS 253 | Software Development with C++ | | | | |
| Select one course from the following: | | X | | | 4 |
| CS 250 | Computer Systems Foundations | | | | |
| CS 270 | Computer Organization | | | | |
| Select one course from the following: | | X | | | 3-4 |
| DSCI 369 | Linear Algebra for Data Science | | | | |
| MATH 369 | Linear Algebra I | | | | |
| Elective | | | | | 0-2 |
| CS 165 and CS 220 and (CS 250 or CS 270) must be completed by the end of Semester 4. | | X | | | |
| MATH 156 or MATH 160 and MATH 369 or DSCI 369 must be completed by the end of Semester 4. | | X | | | |
| Total Credits | | | | | 16 |
| Junior | | | | | |
| Semester 5 | | Critical | Recommended | AUCC | Credits |
| CS 314 | Software Engineering | X | | 4A,4B | 3 |
| CS 370 | Operating Systems | X | | | 3 |
| EDUC 331 | Educational Technology and Assessment | X | | | 2 |
| Advanced Writing (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing) | | | X | 2 | 3 |
| Historical Perspectives (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives) | | | X | 3D | 3 |
| CS 253 must be completed by the end of Semester 5. | | X | | | |
| Total Credits | | | | | 14 |
| Semester 6 | | Critical | Recommended | AUCC | Credits |
| CS 320 | Algorithms--Theory and Practice | X | | | 3 |
| EDUC 350 | Instruction I-Individualization/Management | X | | | 3 |
| EDUC 386 | Practicum-Instruction I | X | | | 1 |
| Two CS courses numbered 300- or above, excluding 380-399 and 480-499 | | X | | | 6-8 |
| One CS course numbered 400- or above, excluding 480-499 | | X | | | 4 |
| CS 314 and CS 320 and CS 370 must be completed by the end of Semester 6. | | X | | | |
| Total Credits | | | | | 17-19 |
| Senior | | | | | |
| Semester 7 | | Critical | Recommended | AUCC | Credits |
| EDCT 465 | Methods and Materials in Technology Education | X | | | 3 |
| EDUC 450 | Instruction II-Standards and Assessment | X | | | 4 |
| EDUC 486E | Practicum: Instruction II | X | | | 1 |
| Two CS Education Standards Courses (See CS Education Standards Course List on Concentration Requirements tab) | | X | | | 7-8 |
| Total Credits | | | | | 15-16 |
| Semester 8 | | Critical | Recommended | AUCC | Credits |
| EDCT 485 | Student Teaching | X | | 4A,4B,4C | 11 |
| EDUC 493A | Seminar: Professional Relations | X | | | 1 |
| Elective | | | X | | 0-1 |
| The benchmark courses for the 8th semester are the remaining courses in the entire program of study. | | X | | | |
| Total Credits | | | | | 12-13 |
| Program Total Credits: | | | | | 120 |