

# Computer Science, B.S.

Department of Mathematics & Computer Science, 303-556-3208, Science Building 1022

College of Letters, Arts, & Sciences

Catalog 15-16

This sheet applies to the 2015-16 catalog *only*. It does not replace the full catalog or departmental advising sheets as official statements of requirements. Students with declared majors *must* work with a faculty advisor on course selection and sequencing to ensure a timely graduation.

General Studies	36-38	
Major courses	50	Students who have reached junior standing (60 hrs.) should request a CAPP (graduation compliance report) and review it with a faculty advisor.
Required Math minor	21-23	
Required ancillary courses	10	
Electives	0-3	
<b>Total to graduate (min. 40 hrs. upper-division)</b>	<b>121-123 min.</b>	

## \*TO BE COMPLETED WITHIN FIRST 30 COLLEGE-LEVEL CREDIT HOURS

### Written Communication

- \_\_\_ ENG 1010 (3 hrs.) Composing Arguments\*
- or ENG 1008/1009 (6 hrs.) Intro to Composition, Parts 1 & 2\*
- \_\_\_ ENG 1020 (3 hrs.) Freshman Comp: Analysis, Research, & Documt.  
(ENG 1020 must be completed within 45 credit hours)

### Oral Communication\*

- \_\_\_ SPE 1010 (3 hrs.)

### Quantitative Literacy\*

- \_\_\_ MTH 1110 (4 hrs.) College Algebra or higher level math
- NOTE: MTH 1110 & MTH 1120 OR MTH 1400 are prereqs for MTH 1410 do not take MTH 1112 College Algebra through Modeling**

### Arts and Humanities

- \_\_\_ (3 hrs.)
- \_\_\_ PHI 3370 (3hrs.) Computers, Ethics, and Society

### Historical

- \_\_\_ (3 hrs.)

### Natural and Physical Sciences (labs required, see CS major advisor†)

- \_\_\_ BIO 1080 (4hrs.) General Biology I & BIO 1090-1 Lab
- or BIO 1081 (4hrs.) General Biology II & BIO 1091-1 Lab
- or CHE 1800 (4hrs.) General Chemistry I  
and CHE 1810 (4hrs.) General Chemistry II & CHE 1850-2 LAB
- or PHY 2311 (4hrs.) General Physics I & PHY2321-2 Lab
- or PHY 2331 (4hrs.) General Physics II & PHY2341-2 Lab

### Social and Behavioral Sciences I

- \_\_\_ (3 hrs.)

### Social and Behavioral Sciences II

- \_\_\_ (3 hrs.)

### Global Diversity

- \_\_\_ (3 hrs.) should be satisfied within General Studies

## MAJOR COURSES Please see a Faculty Advisor in M&CS dept.

NOTE: All CS and MTH courses must be completed with a "C" or higher.

- \_\_\_ **CS 1050 (4 hrs.) Computer Science 1**
  - \_\_\_ CS 1400 (4 hrs.) Computer Organization 1
  - \_\_\_ CS 2050 (4hrs.) Computer Science 2
  - \_\_\_ CS 2400 (4hrs.) Computer Organization 2
  - \_\_\_ CS 3210 (4hrs.) Principles of Programming Languages
  - \_\_\_ CS 3240 (2hrs.) Intro. to the Theory of Computation
  - \_\_\_ CS 3600 (4hrs.) Operating Systems
  - \_\_\_ CS 4050 (4hrs.) Algorithms & Algorithm Analysis
  - \_\_\_ CS 4250 (4hrs.) Software Engineering Principles
  - \_\_\_ CS 4260 (4hrs.) Software Engineering Practices (Senior Experience)
- Computer Science Electives** – Minimum of 16 additional credit hours selected from upper division CS courses or/and MTH4480-6 in consultation with faculty advisor:
- \_\_\_ CS 16 hours or CS 12 hours and MTH 4480-4 Numerical Analysis I

### **Required Ancillary Courses**

- \_\_\_ COM 2610 (3hrs.) Introduction to Technical Writing

### **MATH MINOR COURSES**† (see department for substitutions)

- \_\_\_ MTH 1410 (4hrs.) Calculus I
- \_\_\_ MTH 2140 (2hrs.) Computational Matrix Algebra \*\*
- \_\_\_ MTH 2410 (4hrs.) Calculus II
- \_\_\_ MTH 3170 (4hrs.) Discrete Mathematics for Computer Science \*\*\*
- \_\_\_ MTH 3210 (4hrs.) Probability & Statistics (Calculus-based)

\*\* MTH 3130 or MTH 3140 may be substituted for MTH 2140. Only one of MTH 2140, MTH 3130, or MTH 3140 may be counted.

\*\*\* MTH 3100 may be substituted for MTH 3170 with prior departmental approval (substitution of the 3-credit MTH 3100 for the 4-credit MTH 3170 will require one additional credit of math coursework chosen from MTH 2420 or a 3000- or 4000-level math course, excluding MTH 3240. This course is needed to satisfy the 18-credit hour, Mathematics minor requirement). Additional MTH hours may be selected from MTH 2420 or MTH 3000- or 4000-level courses with the exception of MTH 3240.

†The total credits of departmentally approved science and mathematics courses must be at least 30 credits. Discuss with your CS faculty advisor in M&CS dept.

NOTE: As an alternative to the B.S. degree program, the CS faculty work with the Center for Individualized Learning to provide students with programs customized to their educational needs. (Admin Bldg., 5th Floor)

\_\_\_ **Multicultural Requirement** should be satisfied within General Studies

## ELECTIVES