Program: Software Engineering
Major: Software Engineering
Degree: Bachelor of Science (B.S.)

Dept: Computer Science
College: Mathematics and Science
Major Code: 6110

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Specific courses within the University Core are listed on pages 96-97.
* Courses from the major may apply to the areas marked in the University Core.

**Written and Oral Communication** .......................................................... 9

**Quantitative Reasoning/Scientific Method** ........................................... 10-11
• Math ................................................................................................. 3
• Life Science .................................................................................... 4
• Physical Science ........................................................................... 3-4

**Critical Inquiry and Aesthetic Analysis** .................................................. 6
Aesthetic Analysis ............................................................................. 3
Critical Inquiry .................................................................................. 3

Minimum Required Hours

**Support Courses**

Support Courses ............................................................... 0-9

Students majoring in Software Engineering are encouraged to complete the following course in high school.

Advanced Placement High School Programming Course OR
CMSC 1513 Beginning Programming

*MATH 1533 Algebra for STEM OR Placement Score AND
*MATH 1593 Plane Trigonometry OR Placement Score

* A grade of ‘C’ or better is required for both MATH 1533 and 1593 to take MATH 2313.

Upon completion of the above courses, corresponding university core requirements will be satisfied. (These courses are required for this major regardless of previous degrees conferred.)

**Major Requirements**

Software Engineering ................................................. 77-80

Required .................................................................................. 53

^CMSC 1613 Programming I
^CMSC 1621 Programming I Laboratory
^CMSC 2123 Discrete Structures
^CMSC 2613 Programming II
^CMSC 2833 Computer Organization I
^CMSE 3103 Object Oriented Software Design and Construction
^CMSC 3613 Data Structures and Algorithms
^CMSC 4003 Applications of Database Management Systems
^SE 4283 Software Engineering I
^CMSC 4323 Computer and Network Security
^CMSC 4401 Ethics in Computing
^SE 4423 Software Engineering II
^SE 4433 Software Architecture and Design
^SE 4513 Software Engineering Senior Project *
^MATH 2313 Calculus I
^MATH 2323 Calculus 2
^MATH 2333 Calculus 3
^MATH 3143 Linear Algebra
^STAT 2113 Statistical Methods OR

American Historical and Political Analysis ........................................... 6
American National Government .............................................. 3
American History .................................................................... 3

Cultural and Language Analysis ...................................................... 3-4
Second Language ........................................................................ 4
OR
Cultural Analysis ....................................................................... 3

Social and Behavioral Analysis ......................................................... 3

Life Skills ...................................................................................... 5
Required Health Course .............................................................. 2
Elective Life Skills ...................................................................... 3

Elected Science/Math courses ......................................................... 9-12

Select a minimum of nine (9) hours including at least one of the CHEM or PHY lab courses:

CHEM 1103 General Chemistry I
CHEM 1112 General Chemistry I Recitation/Laboratory
CHEM 1223 General Chemistry II
CHEM 1232 General Chemistry II Recitation/Laboratory
PHY 1114 General Physics I and Laboratory
PHY 1214 General Physics II and Laboratory
PHY 2014 Physics for Science & Engineering I and Lab
PHY 2114 Physics for Science & Engineering II and Lab

Any non-required 2/3/4000 level MATH or STAT courses with the following exceptions: MATH 2013, 2053, 2113, 2123, 2133, 2153, 2743, 3323, or 4843.

Elective Courses ........................................................................ 9

Choose nine (9) hours from one of the two application areas:

Application Development
CMSC 3413 Enterprise Programming
CMSC 4133 Concepts of Artificial Intelligence
CMSC 4303 Mobile Apps Programming
CMSC 4373 Web Server Programming

System Development
CMSC 4023 Programming Languages
CMSC 4063 Networks
CMSC 4153 Operating Systems
CMSC 4173 Translator Design
CMSC 4193 Introduction to Robotics

- CONTINUED ON NEXT PAGE -
Minimum Required Hours

Elective CMSC or SE Courses ........................................................... 6
   Any 3/4000 level CMSC or SE courses except CMSC 4513
   Any programming labs (CMSC 2621 and 3621)

No more than three (3) hours of Internship and Individual Study combined may be used to satisfy the CMSC or SE elective requirement.

Credit cannot be received for both CMSC 3303 and SE 4283.

Electives to bring total to .................................................. 124

Minimum Grade Requirements
Average in (a) all college course work, (b) course work at UCO,
and (c) major courses ................................................................. 2.00

For other regulations pertaining to graduation, see pages 68-69 of the 2018-2019 catalog.