

OCCC Associate in Science - Computer Science to UCO Bachelor of Science - Software Engineering

The University of Central Oklahoma (UCO), in collaboration with Oklahoma City Community College (OCCC), participates in articulated transfer agreements to assist students in transferring smoothly from the associate degree to the baccalaureate degree. These agreements express a shared commitment to student access and success in higher education.

This document specifies courses to be taken at OCCC and courses to be taken at UCO to meet this agreement.

Associate in Science (A.S.) - Computer Science

Students should refer to the associate degree requirements and an academic advisor for associate degree details to ensure a successful transition to UCO.

Oklahoma City Community College General Education

This section is an outline of the general education pattern at OCCC common to all majors. Some general education areas may vary by major. In those areas, consult an academic advisor or refer to the OCCC catalog or requirement sheet. An Associate in Science (A.S.) or Associate in Art (A.A.) degree from an accredited Oklahoma institution that includes the OSRHE minimum requirements will satisfy the UCO University Core.

English Composition

- ENGL 1113 English Composition I (UCO course ENG 1113)
- ENGL 1213 English Composition II (UCO course ENG 1213)

American History

- HIST 1483 U.S. History to 1877 (UCO course HIST 1483)
OR
HIST 1493 U.S. History 1877 to Present (UCO course HIST 1493)

US Government

- POLSC 1113 American Federal Government (UCO course POL 1113)

Science

One course must be a laboratory science. Students should refer to associate degree requirements or consult with an academic advisor for appropriate course selection for specific majors.

Humanities

Students should refer to associate degree requirements or consult with an academic advisor for appropriate course selection for specific majors.

Mathematics

Students should refer to associate degree requirements or consult with an academic advisor for appropriate course selection for specific majors.

Additional Requirements

Students will need at least one 3-hour course from the following disciplines: Psychology, Sociology, Political Science, Economics, Fine Arts (Art, Music, and Theatre), or Modern Languages. Students should refer to associate degree requirements or consult with an academic advisor for appropriate course selection for specific majors.

General Education Electives

Students should refer to associate degree requirements or consult with an academic advisor for appropriate course selection for specific majors.

UCO Major Requirements Taken At OCCC

The courses listed in this section are required at OCCC for this major and will also meet UCO major requirements. The OCCC course is followed by the UCO equivalent or substituted course.

- CS 1143 Beginning Programming (UCO course CMSC 1513)
- MATH 1533 Pre-Calculus (UCO course MATH 1533)
- MATH 1613 Trigonometry (UCO course MATH 1593)
- CS 2163 JAVA (UCO course CMSC 1613)
- CS 2363 C++ (UCO course CMSC 2613)
- MATH 2104 Calculus and Analytic Geometry I (UCO course MATH 2313)
- MATH 2214 Calculus and Analytic Geometry II (UCO course MATH 2323)

Additional Coursework for the A.A. or A.S.

See OCCC catalog and academic advisor for additional associate degree requirements.

Credited courses completed as part of the A.A. or A.S. that do not meet a specific UCO degree requirement transfer to UCO as electives and may count toward the 124-hour minimum. Students should consult an academic advisor to determine how elective courses apply toward the bachelor's degree. Information for individual courses can be found on the UCO website under the UCO Transfer Equivalency Database.

Bachelor of Science (B.S.) - Software Engineering

Degrees from UCO have requirements applicable to all degrees and requirements specific to the program/major.

Degree Requirement Minimums for All Programs/Majors

Students must meet all bachelor's degree requirements at UCO to include minimums of:

- 40 hours of upper division coursework
- 30 hours in residence at UCO
- 15 of the last 30 hours must be taken in residence at UCO
- 60 hours from baccalaureate granting institutions
- 124 total hours

UCO Major Requirements

This section details the course requirements for this major at UCO. The UCO course is followed by the community college equivalent or substituted course. Some courses may be taken at the community college but may or may not apply to the associate major or degree. Consult with an academic advisor for that information.

Support Courses: 0-9 hours

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

- Advanced Placement High School Programming Course
OR
CMSC 1513 Beginning Programming (OCCC course CS 1143)
- MATH 1533 Precalculus-Algebra (OCCC course MATH 1533)
OR
MATH 1513 College Algebra
OR
Placement Score
- MATH 1593 Plane Trigonometry (OCCC course MATH 1613)
OR
Placement Score

A grade of 'C' or better is required for either MATH 1513 or MATH 1533 and MATH 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: 78-81 hours

Software Engineering

Required courses: 55 hours

- CMSC 1613 Programming in C++ (OCCC course CS 2163)
 - CMSC 1621 Programming I Laboratory
 - CMSC 2123 Discrete Structures
 - CMSC 2613 Fundamental Data Structures (OCCC course CS 2363)
 - CMSC 2621 Fundamental Data Structures Lab
 - CMSC 2833 Computer Organization and Architecture I
 - SE 3103 Object Oriented Software Design and Construction
 - CMSC 3613 Data Structures and Algorithms
 - CMSC 3621 Data Structures/Algorithms Lab
 - CMSC 4003 Applications of Database Management Systems
 - CMSC 4083 Cybersecurity
 - SE 4283 Software Engineering I
 - CMSC 4401 Ethics in Computing
 - SE 4423 Software Engineering II
 - SE 4433 Software Architecture and Design
 - SE 4513 Software Engineering Senior Project (Recommended to be taken in the last semester prior to graduation)
 - MATH 2313 Calculus 1 (OCCC course MATH 2104)
 - MATH 2323 Calculus 2 (OCCC course MATH 2214)
 - MATH 2333 Calculus 3 (OCCC course MATH 2314 may be taken.)
 - MATH 3143 Linear Algebra
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- STAT 2113 Statistical Methods (OCCC course MATH 2013 may be taken.)
OR
STAT 2103 Introduction to Statistics for Sciences
OR
STAT 4113 Mathematical Statistics 1

A grade of 'C' or better must be earned in all required CMSC, SE, MATH and STAT courses.

Elective Science/Math courses: 8-11 hours

Select a minimum of eight (8) hours including at least one of the CHEM or PHY lab courses:

- CHEM 1103 General Chemistry I

- CHEM 1112 General Chemistry I Recitation/Laboratory (OCCC course CHEM 1115 may be taken to count for UCO courses CHEM 1103 **AND** CHEM 1112.)
- CHEM 1223 General Chemistry II
- CHEM 1232 General Chemistry II Recitation/Laboratory (OCCC course CHEM 1215 may be taken to count for UCO courses CHEM 1223 **AND** CHEM 1232.)
- PHY 1114 General Physics I and Laboratory (OCCC course PHYS 1114 may be taken.)
- PHY 1214 General Physics II and Laboratory (OCCC course PHYS 1214 may be taken.)
- PHY 2104 Physics for Science & Engineering I and Lab (OCCC course PHYS 2104 may be taken.)
- PHY 2114 Physics for Science & Engineering II and Lab (OCCC course PHYS 2114 may be taken.)
- 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 hours

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

Application Development

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- CMSC 3413 Enterprise Programming
 - CMSC 4133 Concepts of Artificial Intelligence
 - CMSC 4143 Algorithms for Machine Learning
 - CMSC 4303 Mobile Apps Programming
 - CMSC 4313 Internet of Things
 - CMSC 4373 Cloud Web Apps Development

Cybersecurity

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- CMSC 4163 Secure Systems Administration
 - CMSC 4323 Network Security
 - CMSC 4333 Incident Analysis and Response I
 - CMSC 4343 Cyber Operations
 - CMSC 4353 Incident Analysis and Response II

Students who choose the Cybersecurity application area are recommended to take CMSC 4063 Computer Networks and/or CMSC 4153 Operating Systems as prerequisites. CMSC 4063 and 4153 can be counted in the “Elective CMSC or SE courses” section.

System Development

- CMSC 4023 Programming Languages
- CMSC 4063 Computer Networks
- CMSC 4153 Operating Systems
- CMSC 4173 Translator Design
- CMSC 4193 Introduction to Robotics
- CMSC 4223 Cyber Infrastructure and Cloud Computing

Elective CMSC or SE Courses: 6 hours

- Any 2/3/4000 level CMSC or SE courses except CMSC 4513

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.

Minimum Grade Requirements

- Average in (a) all college course work, (b) course work at UCO, and (c) major courses:
2.00

Electives

All UCO degrees require a minimum of 124 credit hours. Electives may be needed to bring total credit hours to 124.

Transfer Policies

Transfer policies are available in the Introduction for Program-to-Program Agreements. This agreement does not include all possible variations for transfer with these programs/majors. The Academic Advisors along with the information in the official catalogs at both institutions are critical to the understanding of the specifics of degree completion.

Disclaimer

The provisions of this transfer agreement do not constitute a contract, expressed or implied, between any applicant or student and the University of Central Oklahoma. The university reserves the right to make changes in degree requirements, degree offerings, schedules, course offerings, and other university standards to meet circumstances which may arise after publishing this information online.

Agreement Last Updated: 2024-2025