COMPUTER SCIENCE, BS

Degree Requirements

Requirements for Students Matriculating in or before Academic Year 2021-2022. Learn more about University Academic Regulation 3.1 (http://catalog.okstate.edu/university-academic-regulations/#matriculation).

Minimum Overall Grade Point Average: 2.00
Total Hours: 120

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>ENGL 1113</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 1313</td>
<td>Critical Analysis and Writing I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
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<tr>
<td>ENGL 1213</td>
<td>Composition II</td>
<td></td>
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<tr>
<td>ENGL 1413</td>
<td>Critical Analysis and Writing II</td>
<td></td>
</tr>
<tr>
<td>ENGL 3323</td>
<td>Technical Writing</td>
<td></td>
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American History & Government

HIST 1103 | Survey of American History | 3 |
| or HIST 1483 | American History to 1865 (H) | |
| or HIST 1493 | American History Since 1865 (DH) | |

POLS 1113 | American Government | 3 |

Analytical & Quantitative Thought (A)

CS 1113 | Computer Science I (A) | 3 |

MATH 2144 | Calculus I (A) | 3 |

Humanities (H)

Courses designated (H) | 6 |

Natural Sciences (N)

Must include one Laboratory Science (L) course.

Courses designated (N) | 6 |

Social & Behavioral Sciences (S)

SPCH 2713 | Introduction to Speech Communication (S) | 3 |

Additional General Education

Courses designated (A), (H), (N), or (S) | 6 |

Hours Subtotal | 40 |

Diversity (D) & International Dimension (I)

May be completed in any part of the degree plan

Select at least one Diversity (D) course

Select at least one International Dimension (I) course

College/Departmental Requirements

First Year Seminar

(Transfer students with 15 hours exempt) | 1 |

Arts & Humanities

See note 2.a. | 3 |

Natural & Mathematical Sciences

CS 2133 | Computer Science II | 3 |

MATH 2153 | Calculus II (A) | 3 |

STAT 4033 | Engineering Statistics | 3 |

Foreign Languages

See note 3 |

0-6 hours

Upper Division General Education

Select 6 hours outside major department (see note 2.c.)

Hours Subtotal | 13 |

Major Requirements

Minimum major GPA 2.50 with a minimum grade of "C" in each course and all MATH and CS courses

CS 3353 | Data Structures and Algorithm Analysis I | 3 |

CS 3363 | Organization of Programming Languages | 3 |

CS 3443 | Computer Systems | 3 |

CS 3513 | Numerical Methods for Digital Computers | 3 |

CS 3613 | Theoretical Foundations of Computing | 3 |

CS 3653 | Discrete Mathematics for Computer Science | 3 |

CS 4323 | Design and Implementation of Operating Systems I | 3 |

CS 4883 | Social Issues in Computing | 3 |

MATH 2163 | Calculus III | 3 |

MATH 3013 | Linear Algebra (A) | 3 |

Select one of the following: | | 3 |

ENGL 3323 | Technical Writing | |

BCOM 3113 | Written Communication | |

BCOM 3223 | Oral Communication | |

SPCH 3723 | Business and Professional Communication | |

CS electives

Select 12 hours CS electives (upper-division courses and CS 2433 and excluding CS 4113) | 12 |

Select 9 hours in the following areas: | | 9 |

Computer Science (upper-division courses and CS 2433 and excluding CS 4113) |

Engineering (upper-division courses) |

Geography (GEOG 3333, GEOG 4303, GEOG 4323, GEOG 4333, GEOG 4343, GEOG 4353, GEOG 4383) |

Management Science and Information Systems (upper-division courses) |

Mathematics (upper-division courses and MATH 2233 and excluding MATH 3303, MATH 3403, and MATH 3603) |

Natural Sciences (upper-division courses with natural science designation or upper-division courses in BIO, BIOL, CHEM, GEOL, MICR, PBIO, PHYS) |

Statistics (upper-division courses) |

Hours Subtotal | 54 |

Electives

Select 13 hours of electives | 13 |

May need to include 6 hours of a foreign language. See note 3 |

May need to include 6 hours upper-division general education outside major department (see note 2.c.) |

May need to include MATH 1513 and/or MATH 1813 if student does not place into MATH 2144 |

Hours Subtotal | 13 |

Total Hours | 120 |
CS Electives

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<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>CS 2433</td>
<td>C/C++ Programming</td>
<td>3</td>
</tr>
<tr>
<td>CS 3030</td>
<td>Industrial Practice in Computer Science</td>
<td>1-6</td>
</tr>
<tr>
<td>CS 3570</td>
<td>Special Problems in Computer Science</td>
<td>1-6</td>
</tr>
<tr>
<td>CS 4143</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CS 4153</td>
<td>Mobile Applications Development</td>
<td>3</td>
</tr>
<tr>
<td>CS 4173</td>
<td>Video Game Development</td>
<td>3</td>
</tr>
<tr>
<td>CS 4183</td>
<td>Video Game Design</td>
<td>3</td>
</tr>
<tr>
<td>CS 4243</td>
<td>Introduction to Computer Security</td>
<td>3</td>
</tr>
<tr>
<td>CS 4273</td>
<td>Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CS 4283</td>
<td>Computer Networks</td>
<td>3</td>
</tr>
<tr>
<td>CS 4433</td>
<td>Introduction to Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 4513</td>
<td>Numerical Mathematics: Analysis</td>
<td>3</td>
</tr>
<tr>
<td>CS 4523</td>
<td>Cloud Computing and Distributed Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 4570</td>
<td>Special Topics in Computing</td>
<td>1-3</td>
</tr>
<tr>
<td>CS 4623</td>
<td>Introduction to Cyber Physical Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 4743</td>
<td>Extended Reality</td>
<td>3</td>
</tr>
<tr>
<td>CS 4783</td>
<td>Machine Learning</td>
<td>3</td>
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<tr>
<td>CS 4793</td>
<td>Artificial Intelligence I</td>
<td>3</td>
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<tr>
<td>CS 4983</td>
<td>Senior Capstone Project</td>
<td>3</td>
</tr>
<tr>
<td>CS 4993</td>
<td>Senior Honors Project</td>
<td>3</td>
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Other Requirements

- See the College of Arts and Sciences Requirements.
- **Upper-Division Credit**: Total hours must include at least 40 hours in courses numbered 3000 or above.
- **Hours in One Department**: For B.A. and B.S. degrees, no more than 54 hours in one department may be applied to degree requirements.

College of Arts and Sciences Requirements

1. **General Education Requirements**
   No more than two courses (or eight hours) from the major department (http://catalog.okstate.edu/college-arts-sciences-major-departments/) may be used to meet General Education and College and Departmental Requirements. The General Education required English Composition, required U.S. History, required American Government, one required MATH or STAT course, and required foreign language for B.A. degrees do not count against the two-course maximum.

2. **A&S College/Departmental Requirements**
   a. Arts and Humanities are defined as any course carrying an (H) designation or courses from AMST, ART, DANC, ENGL (except ENGL 3323 Technical Writing) HIST, MUSI, PHIL (except PHIL 1313 Logic and Critical Thinking (A), PHIL 3003 Symbolic Logic (A) and PHIL 4003 Mathematical Logic and Computability), REL, TH, and foreign languages.
   b. Natural and Mathematical Sciences are defined as any course from the following prefixes: ASTR, BIOL, BIOL, CHEM, CS (except CS 4883 Social Issues in Computing), GEOL, MATH, MICR, PBIO, PHYS, and STAT; or courses from other departments that carry an (A) or (N) general education designation.
   c. The required six hours of upper-division General Education may not include courses from the student's major department. This requirement may be satisfied by courses also used to satisfy any part of a student’s degree program (i.e., in General Education, College Departmental Requirements, Major Requirements or Electives).
   d. Non-Western Studies Requirement for B.A. and B.F.A.; One 3-hour course in Non-Western Studies (N.W.). This requirement may be satisfied by courses also used to satisfy any part of a student’s degree program (i.e., in General Education, College Departmental Requirements, Major Requirements or Electives).
   e. The College of Arts & Sciences requires a minimum 2.0 GPA in all major requirements and a minimum 2.0 GPA in all major-prefix courses applied to the degree.

3. **Foreign Language Proficiency**
   a. The foreign language requirement for the B.A. may be satisfied by 9 hours college credit in the same language, which must include 3 hours at the 2000-level, or equivalent proficiency (e.g., passing an advanced standing examination; TOEFL exam; presenting a high school transcript which demonstrates the high school was primarily conducted in a language other than English; etc.). Computer Science courses may not be used to satisfy this requirement. Currently Arabic and Mvskoke are not offered at the 2000-level at OSU.
   b. The foreign language requirement for the B.S., B.M. and B.F.A. may be satisfied by presenting a high school transcript which demonstrates two years of study of a single foreign language (passing grades at second-year level of study). It may also be satisfied by 6 hours college credit in the same language, which must include language courses 1713 and 1813, or equivalent proficiency (e.g., passing an advanced standing examination; TOEFL exam; presenting a high school transcript which demonstrates the high school was primarily conducted in a language other than English; etc.). Computer Science courses may not be used to satisfy this requirement.
   c. In addition to a. and b., students pursuing teacher certification must meet novice-high foreign language proficiency by presenting a high school transcript which demonstrates two years of study of a single foreign language with no grade below B. Or, students may complete 3 hours college credit in a single language with no grade below C (or pass an advanced standing examination, College Level Examination Program (CLEP) exam, or Oral Proficiency Interview developed by the American Council on the Teaching of Foreign Languages, equivalent to 3 hours of college credit.) Or, students may meet the requirement by transfer of documentation of meeting the foreign language competency from one of the teacher education programs in the State of Oklahoma approved by the Oklahoma State Regents for Higher Education.

4. **Exclusions**
   a. Courses used to satisfy the General Education English Composition, U.S. History, American Government, and Mathematics or Statistics requirements will not count toward the 54-hour maximum allowed from one department.
   b. Courses with ATHL or LEIS prefixes and leisure activity courses may not be used for degree credit.

5. **Teacher Certification**
   Students can satisfy the requirements for secondary schools teaching certification while earning a B.A. or B.S. in the College of Arts & Sciences. Those interested should see their Arts and Sciences advisor and the OSU Professional Education Unit in room 325 Willard.
Additional State/OSU Requirements

- At least: 60 hours at a four-year institution; 30 hours completed at OSU; 15 of the final 30 or 50% of the upper-division hours in the major field completed at OSU.
- Limit of: one-half of major course requirements as transfer work; one-fourth of hours earned by correspondence; 8 transfer correspondence hours.
- Students will be held responsible for degree requirements in effect at the time of matriculation and any changes that are made, so long as these changes do not result in semester credit hours being added or do not delay graduation.
- Degrees that follow this plan must be completed by the end of Summer 2027.