**GENERAL EDUCATION AND COLLEGE REQUIREMENTS**

Courses designated as Core I, II, III, IV, or V are part of the General Education curriculum. Students must complete a minimum of 40 hours of General Education courses, chosen from the approved list, including at least one upper-division Gen. Ed. course outside of the student's major. Courses graded P/NP will not apply.

A grade of C or better is required in each course in the curriculum, including all prerequisite courses.

**UNIVERSITY-WIDE GENERAL EDUCATION (MINIMUM 40 HOURS) AND COLLEGE REQUIREMENTS**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1113</td>
<td>Principles of English Composition</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1213</td>
<td>Principles of English Composition</td>
<td>3</td>
</tr>
<tr>
<td>or EXPO 1213</td>
<td>Expository Writing</td>
<td></td>
</tr>
<tr>
<td>CHEM 1315</td>
<td>General Chemistry (Core II-Lab)</td>
<td>2</td>
</tr>
<tr>
<td>or CHEM 1335</td>
<td>General Chemistry I: Signature Course</td>
<td></td>
</tr>
<tr>
<td>P SC 1113</td>
<td>American Federal Government</td>
<td>1</td>
</tr>
<tr>
<td>ENGR 2002</td>
<td>Engineering Fundamentals</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credit Hours**

40-50

1  MATH 1823, MATH 2423, MATH 2433, and MATH 2443 sequence can be substituted for MATH 1914, MATH 2924, and MATH 2934.
2  Major support requirements that also satisfy University General Education requirements.
3  To be chosen from the University-Wide General Education Approved Course List. Three of these hours must be upper-division (3000-4000). See list in the Class Schedule.

**FREE ELECTIVES**

Electives to bring total applicable hours to the minimum total required for the degree including a minimum of 40 upper-division hours.

**MAJOR REQUIREMENTS**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C S 1323</td>
<td>Introduction to Computer Programming for Programmers</td>
<td>3</td>
</tr>
<tr>
<td>C S 2334</td>
<td>Programming Structures and Abstractions</td>
<td>4</td>
</tr>
<tr>
<td>C S 2413</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>C S 2813</td>
<td>Discrete Structures</td>
<td>3</td>
</tr>
<tr>
<td>C S 3113</td>
<td>Introduction to Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>C S 3823</td>
<td>Theory of Computation</td>
<td>3</td>
</tr>
<tr>
<td>C S 4413</td>
<td>Algorithm Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ECE 2214</td>
<td>Digital Design</td>
<td>4</td>
</tr>
<tr>
<td>ECE 2523</td>
<td>Probability, Statistics and Random Processes</td>
<td>3</td>
</tr>
<tr>
<td>ECE 2713</td>
<td>Digital Signals and Filtering</td>
<td>3</td>
</tr>
<tr>
<td>ECE 2723</td>
<td>Electrical Circuits</td>
<td>3</td>
</tr>
<tr>
<td>ECE 3223</td>
<td>Microprocessor System Design</td>
<td>3</td>
</tr>
<tr>
<td>ECE 3723</td>
<td>Electrical Circuits II</td>
<td>3</td>
</tr>
<tr>
<td>ECE 3773</td>
<td>Electrical and Computer Engineering Circuits Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>ECE 3793</td>
<td>Signals and Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 3813</td>
<td>Introductory Electronics</td>
<td>3</td>
</tr>
<tr>
<td>ECE 3873</td>
<td>Electrical and Computer Electronics</td>
<td>3</td>
</tr>
<tr>
<td>ECE 4273</td>
<td>Digital Design Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>ECE 4613</td>
<td>Computer Architecture</td>
<td>3</td>
</tr>
<tr>
<td>ECE 4773</td>
<td>Laboratory (Special Projects)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credit Hours**

62

**MAJOR SUPPORT REQUIREMENTS**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 2924</td>
<td>Differential and Integral Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 2934</td>
<td>Differential and Integral Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH 3113</td>
<td>Introduction to Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 3333</td>
<td>Linear Algebra I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 2524</td>
<td>General Physics for Engineering and Science Majors</td>
<td>4</td>
</tr>
</tbody>
</table>

**Electives**

Choose one ECE G4000-level or higher elective

Choose one C S G4000/-5000 approved elective

**Additional Requirements**

ENGR 1411 | Pathways to Engineering Thinking               | 1            |
ENGR 2002 | Professional Responsibilities and Skills of Engineers and Scientists | 2 |

**Total Credit Hours**

27

1  Electives to be selected from list available in the ECE Office, DEH-150.
2  Chosen from an approved list of courses maintained by the School of Computer Science.
3  Engineering transfer students may take ENGR 3511 in place of ENGR 1411.

**GRADUATE REQUIREMENTS**

12 hours of graduate-level coursework are shared between the BS and MS degrees.

No more than three courses at the C S G4000 level are permitted. No more than 3 credit hours of C S 5990 are permitted (students who have the graduate liaison's approval to complete a
Requirements for the Bachelor of Science/Master of Science project option may take 6 hours. No more than 6 credit hours of Special Topics in Computer Science are permitted (even with a change in subject).

### THESIS OPTION

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C S 4413</td>
<td>Algorithm Analysis (or equivalent as approved by the graduate liaison)</td>
<td>3</td>
</tr>
<tr>
<td>C S 4513</td>
<td>Database Management Systems (or equivalent as approved by the graduate liaison)</td>
<td>3</td>
</tr>
<tr>
<td>Four courses selected from an approved list maintained by the School of Computer Science</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

**Electives**

Choose any Computer Science graduate class

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C S 5980</td>
<td>Research for Master's Thesis</td>
<td>6</td>
</tr>
</tbody>
</table>

**Total Credit Hours**

30

1 Any C S graduate class including MATH 5743, MATH 4753, MATH 4073, or ECE 4000G or higher as approved by the Computer Science graduate liaison. Other courses outside C S require prior approval of the graduate liaison.

### NON-THESIS OPTION

The non-thesis degree is a coursework-only degree; a non-thesis examination is not required.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C S 4413</td>
<td>Algorithm Analysis</td>
<td>3</td>
</tr>
<tr>
<td>C S 4513</td>
<td>Database Management Systems</td>
<td>3</td>
</tr>
<tr>
<td>Four courses selected from a list maintained by the School of Computer Science</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

**Electives**

Choose 15 hours from any Computer Science graduate class

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C S 5980</td>
<td>Research for Master's Thesis</td>
<td>6</td>
</tr>
</tbody>
</table>

**Total Credit Hours**

33

1 Any C S graduate class including MATH 5743, MATH 4753, MATH 4073, or ECE 4000G or higher as approved by the Computer Science graduate liaison. Other courses outside C S require prior approval of the graduate liaison.

SUGGESTED SEMESTER PLAN OF STUDY

Bachelor of Science in Computer Engineering accredited by the Engineering Accreditation Commission of ABET, https://www.abet.org, under the General Criteria and the Electrical, Computer, Communications, Telecommunication(s) and Similarly Named Program Criteria.

In order to progress in your curriculum in the Gallogly College of Engineering, and as a specific graduation requirement, a grade of C or better is required in each course in the curriculum, including all prerequisite courses.

Two college-level courses in a single world language are required; this may be satisfied by successful completion of 2 years in a single world language in high school. Students must choose language at the University will have an additional 6-10 hours of coursework.

No more than three credit hours of the University-Wide General Education Approved Course List.

Students are eligible to enter accelerated program after application is granted for unconditional enrollment in upper-division ECE courses and meeting minimum requirements, including a 3.50 retention and 3.50 combined retention grade point average. Students may enter the accelerated program based on the undergraduate degree pattern offered in the year they first enrolled in the Oklahoma State System of Higher Education or later.

Students are eligible for graduate status upon graduation with the Bachelor of Science in Computer Engineering.

<table>
<thead>
<tr>
<th>Year</th>
<th>FIRST SEMESTER</th>
<th>Hours</th>
<th>SECOND SEMESTER</th>
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<tr>
<td>FRESHMAN</td>
<td>ENGL 1113 Principles of English Composition (Core I)</td>
<td>3</td>
<td>ENGL 1213 or EXPO 1213 Principles of English Composition (Core I) or Expository Writing</td>
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<tr>
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<td>CHEM 1315 General Chemistry (Core II-Lab)</td>
<td>5</td>
<td>MATH 2924 Differential and Integral Calculus II</td>
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<td>MATH 1914 Differential and Integral Calculus I (Core I)</td>
<td>4</td>
<td>PHYS 2514 General Physics for Engineering and Science Majors (Core II)</td>
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<td>HIST 1483 or HIST 1493 United States to 1865 (Core IV) or United States, 1865 to the Present</td>
<td>3</td>
<td>First-Year Experience (Core V)</td>
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<td>ENGR 1411 Pathways to Engineering Thinking</td>
<td>3</td>
<td>C S 1323 Introduction to Computer Programming for Programmers</td>
<td>3</td>
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<tr>
<td>CREDIT HOURS</td>
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<td>SOPHOMORE</td>
<td>MATH 2934 Differential and Integral Calculus III</td>
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<td>MATH 3113 Introduction to Ordinary Differential Equations</td>
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<td>PHYS 2524 General Physics for Engineering and Science Majors</td>
<td>4</td>
<td>C S 2413 Data Structures</td>
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<td>C S 2334 Programming Structures and Abstractions</td>
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<td>C S 2813 Discrete Structures</td>
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<td>ECE 2214 Digital Design</td>
<td>4</td>
<td>ECE 2713 Digital Signals and Filtering</td>
<td>3</td>
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<td>P SC 1113 American Federal Government (Core III)</td>
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<td>ECE 2723 Electrical Circuits I</td>
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<td>ENGR 2002 Professional Responsibilities and Skills of Engineers and Scientists</td>
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<td>JUNIOR</td>
<td>C S 3823 Theory of Computation</td>
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<td>MATH 3333 Linear Algebra I</td>
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<td>ECE 3723 Electrical Circuits II</td>
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<td>ECE 3223 Microprocessor System Design</td>
<td>3</td>
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<td>ECE 3773 Electrical and Computer Engineering Circuits Laboratory</td>
<td>3</td>
<td>ECE 3793 Signals and Systems</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ECE 3813 Introductory Electronics</td>
<td>3</td>
<td>ECE 3873 Electrical and Computer Engineering Electronics Laboratory</td>
<td>3</td>
</tr>
<tr>
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<td>ECE 2523 Probability, Statistics and Random Processes</td>
<td>3</td>
<td>Approved Elective, Artistic Forms (Core IV)</td>
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<td>CREDIT HOURS</td>
<td>15</td>
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<tr>
<td>SENIOR</td>
<td>C S 3113 Introduction to Operating Systems</td>
<td>3</td>
<td>ECE 4773 Laboratory (Special Projects)</td>
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</tr>
<tr>
<td></td>
<td>C S 4413 Algorithm Analysis</td>
<td>3</td>
<td>C S G4000/5000 Approved Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ECE 4273 Digital Design Laboratory</td>
<td>3</td>
<td>ECE 4613 Computer Architecture</td>
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<td>ECE 4000 or higher Elective</td>
<td>3</td>
<td>Approved Elective, Social Science (Core III)</td>
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<tr>
<td></td>
<td>Approved Elective, Western Culture (Core IV)</td>
<td>3</td>
<td>Approved Elective, World Culture (Core IV)</td>
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</tr>
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<td>CREDIT HOURS</td>
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<td>CREDIT HOURS</td>
<td>15</td>
<td></td>
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<tr>
<td>MASTERS</td>
<td>C S 4513 Database Management Systems</td>
<td>3</td>
<td>5000-level Approved Elective</td>
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<td>5000-level Approved Elective</td>
<td>3</td>
<td>5000-level C S Elective</td>
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<td>5000-level C S Elective</td>
<td>3</td>
<td>C S 5980 Research for Master’s Thesis</td>
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<tr>
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<td>CREDIT HOURS</td>
<td>9-12</td>
<td></td>
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</tbody>
</table>

1 CHEM 1315 can be substituted with CHEM 1335 (Fall only).
2 MATH 1823, MATH 2423, MATH 2433, and MATH 2443 sequence can be substituted for MATH 1914, MATH 2924, and MATH 2934.
3 Engineering transfer students may take ENGR 3511 in place of ENGR 1411.
4 To be chosen from the University-Wide General Education Approved Course List. Three of these hours must be upper-division (3000-4000). See list in the Class Schedule.
5 Electives to be selected from list available in the ECE Office, DEH-150.
6 Students must choose three courses (9 hours) from an approved list of courses maintained by the School of Computer Science.
7 Thesis option requires a total of 6 hours of 5000-level electives and 6 hours of C S 5980. Non-thesis option requires a total of 15 hours of 5000-level electives.

Courses designated as Core I, II, III, IV or V are part of the General Education curriculum. Students must complete a minimum of 40 hours of General Education courses, chosen from the approved list.