## REQUIREMENTS FOR THE BACHELOR OF SCIENCE IN COMPUTER SCIENCE

(Accredited by the Accreditation Board for Engineering and Technology)

### COLLEGE OF ENGINEERING

THE UNIVERSITY OF OKLAHOMA

For Students Entering the Oklahoma State System for Higher Education

Summer 2007 through Spring 2008

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### GENERAL REQUIREMENTS

<table>
<thead>
<tr>
<th>Total Credit Hours</th>
<th>120-121*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Retention/Graduation Grade Point Averages:</td>
<td>2.00</td>
</tr>
<tr>
<td>Overall - Combined and OU</td>
<td>2.00</td>
</tr>
<tr>
<td>Major - Combined and OU</td>
<td>2.00</td>
</tr>
<tr>
<td>Curriculum - Combined and OU</td>
<td>2.00</td>
</tr>
</tbody>
</table>

A minimum grade of C is required for each course in the curriculum.

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### Computer Science

0701C  
Bachelor of Science in Computer Science

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### OU encourages students to complete at least 31 hours of applicable coursework each year to have the opportunity to graduate in four years.

<table>
<thead>
<tr>
<th>Year</th>
<th>FIRST SEMESTER</th>
<th>Hours</th>
<th>SECOND SEMESTER</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRESHMAN</td>
<td>ENGL 1113, Prin. of English Composition (Core I)</td>
<td>3</td>
<td>CHEM 1315, General Chemistry (Core II, lab)</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>MATH 1823, Calculus &amp; Analytic Geometry I (Core I)</td>
<td>3</td>
<td>ENGL 1213, Prin. of English Composition (Core I), or</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PSC 1113, American Federal Government (Core III)</td>
<td>3</td>
<td>EXPO 1213, Expository Writing (Core I)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>ENGR 1410, Freshman Engineering Orientation I</td>
<td>0</td>
<td>MATH 2423, Calculus &amp; Analytic Geometry II (Core I)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>†Approved Elective: Artistic Forms (Core IV)</td>
<td>3</td>
<td>SC S 1323, Intro. to Computer Programming</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>†Approved Elective: Social Science (Core III)</td>
<td>3</td>
<td>ENGR 1420, Freshman Engineering Orientation II</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td>15</td>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td>14</td>
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</tbody>
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### SOPHOMORE

<table>
<thead>
<tr>
<th>Year</th>
<th>FIRST SEMESTER</th>
<th>Hours</th>
<th>SECOND SEMESTER</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MATH 2433, Calculus &amp; Analytic Geometry III</td>
<td>3</td>
<td>MATH 2443, Calculus &amp; Analytic Geometry IV</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>C S 2334, Programming Structures &amp; Abstractions</td>
<td>4</td>
<td>C S 2813, Discrete Structures</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>C S 2603, Applied Logic for Hardware &amp; Software</td>
<td>3</td>
<td>C S 2413, Data Structures</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PHYS 1311, General Physics Lab I (if taking two PHYS)</td>
<td>0-1</td>
<td>C S 2613, Computer Organization</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PHYS 2514, General Physics for Engineering &amp; Science Majors (Core II)</td>
<td>4</td>
<td>CHEM 1415, General Chemistry, or</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td>14-15</td>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td>17</td>
</tr>
</tbody>
</table>

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### JUNIOR

<table>
<thead>
<tr>
<th>Year</th>
<th>FIRST SEMESTER</th>
<th>Hours</th>
<th>SECOND SEMESTER</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MATH 3113, Intro. to Ordinary Differential Equations, or</td>
<td>3</td>
<td>AME/C S 3723, Numerical Methods for Engineering Comp., or</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MATH 3413, Physical Mathematics I</td>
<td>3</td>
<td>MATH 4073, Numerical Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>COMM 2613, Public Speaking</td>
<td>3</td>
<td>ENGL 3153, Technical Writing, or</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>C S 3113, Intro. to Operating Systems</td>
<td>3</td>
<td>B C 2813, Business Communication</td>
<td>3</td>
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<tr>
<td></td>
<td>C S 3323, Principles of Programming Languages</td>
<td>3</td>
<td>MATH 3333, Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ENGR 2003, Engineering Practice I</td>
<td>3</td>
<td>C S 3053, Human Computer Interaction</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td>15</td>
<td>C S 3823, Theory of Computation</td>
<td>3</td>
</tr>
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### SENIOR

<table>
<thead>
<tr>
<th>Year</th>
<th>FIRST SEMESTER</th>
<th>Hours</th>
<th>SECOND SEMESTER</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HIST 1483, U.S., 1492-1865, or 1493, U.S., 1865-Present (Core IV)</td>
<td>3</td>
<td>C S 4273, Software Engineering II (Capstone)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>C S 4263, Software Engineering I</td>
<td>3</td>
<td>†Approved C S Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>C S 4413, Algorithm Analysis</td>
<td>3</td>
<td>†Approved C S Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>†C S Approved C S Elective</td>
<td>3</td>
<td>†Approved Elective: Non-Western Culture (Core IV)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>1 of the following 3 courses:</td>
<td></td>
<td>†Approved Elective: Western Civ. &amp; Culture (Core IV)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MATH 4753, Applied Statistical Methods, or</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IE 3293, Applied Engineering Statistics</td>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>MATH 4743, Intro. to Mathematical Statistics</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td>15</td>
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<td>15</td>
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### NOTE:

Engineering transfer students may take ENGR 3410 in place of ENGR 1410 and ENGR 1420.

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

†To be chosen from the University-Wide General Education Approved Course List. Three of these 12 hours must be upper-division (3000-4000). See list in the Class Schedule.

In the College of Engineering, in order to progress in your curriculum, and as a specific graduation requirement, a grade of C or better is required in each course in the curriculum. Please refer to the General Catalog for additional enrollment limitations.

Students should read the College of Engineering Scholastic Regulations which are posted on the WSSC Bulletin Board across from FH 112.

Students must successfully complete prerequisite courses (with a minimum C grade) before proceeding to the next course.

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

†To be chosen from C S 4013, 4023, 4033, 4053, 4113, 4133, 4163, 4323, 4433, 4513, 4613, 4743, and 4973.

§This course fulfills the Computer Literacy Requirement for graduation as required by the Oklahoma State Regents for Higher Education.

### NOTE:

See an adviser in the Arts and Sciences Advising Center (EL 124) about a possible minor in mathematics.
1323 Introduction to Computer Programming. Prerequisite: Mathematics 1523 or equiva-

lent. Introduction to the design and implementation of computer software with an emphasis on a single computer language. (Fall, Spring, Summer)

2344 Programming Structures and Abstractions. Prerequisite: 1323 and Mathematics

1823. Application of software engineering principles with examples from central areas of
computer science. Use of abstract data types such as stacks, queues, lists, trees, file pro-
cessing, searching, and sorting. Introduction to object-oriented software engineering and phi-
losophical ethics theories. Discussion of intellectual property rights and privacy. A program design tool will be used. (F, Sp)

2411 Data Structures. Prerequisite: 2344 and 1813 or Mathematics 2513, or co-
current enrollment in 2813 or Mathematics 2513. Representation and analysis of widely
used data structures and associated algorithms. Design of software systems. Written commu-
nication skills required. Discussed topics may include data safety, plagiarism, piracy,

3345 Abuse of Software. (Sp)

1823 Design of medium scale software systems. (Sp)

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