

**Computational Science BS Degree 4-Year Example Course Plan - Credit Hours Required: 120 (As shown in example below: 122 hours)**

**NOTE:** This table represents a typical 4-year course plan, but this is one of many possible permutations. Specific courses and the semesters in which they are taken are determined in consultation with the student's academic advisor each semester. It is strongly suggested that students use this example plan, in conjunction with their DegreeWorks report, to prepare their own course plan. Please note that additional prerequisite MATH courses may be necessary, depending on the student's math placement test score.

<b>Fall semester</b>	<b>Cr.</b>	<b>Spring semester</b>	<b>Cr.</b>
<b>First Year</b>			
CSCI B104 Comptr Programming Techniques, Practices, & Tools (Program Requirement)	<b>3</b>	CSCI B150 Introduction to Computer Science (Program Requirement)	<b>3</b>
MATH B115 Pre-Calculus (If necessary as prerequisite for later MATH courses; may fulfill GE Numerical & Analytical Reasoning requirement or Free Elective, as needed)	<b>4</b>	MATH 141 Calculus I (If necessary as prerequisite for later MATH courses; may fulfill GE Numerical & Analytical Reasoning requirement or Free Elective, as needed)	<b>4</b>
ENGL B101 Composition and Rhetoric (GE English Requirement)	<b>3</b>	ENGL B102 Composition and Literature (GE English Requirement)	<b>3</b>
General Education (GE) Elective (Liberal Arts, History, Fine Arts, Social/Behavioral Sciences, Speech, Foreign Language, Global Citizenship & Multicultural Understanding)	<b>3</b>	General Education (GE) Elective (Liberal Arts, History, Fine Arts, Social/Behavioral Sciences, Speech, Foreign Language, Global Citizenship & Multicultural Understanding)	<b>3</b>
General Education (GE) Elective	<b>3</b>	General Education (GE) Elective	<b>3</b>
<b>Total Semester Hours</b>	<b>16</b>	<b>Total Semester Hours</b>	<b>16</b>
<b>Second year</b>			
CSCI B145 Object-Oriented Programming I (formerly "Java Programming & Algorithmic Design I") (Program Requirement)	<b>4</b>	CSCI B146 Object-Oriented Programming II (formerly "Algorithm Design II") (Program Requirement)	<b>4</b>
MATH B142 Calculus II (If necessary as prerequisite for later MATH courses; may fulfill GE Numerical & Analytical Reasoning requirement or Free Elective, as needed)	<b>4</b>	MATH B240 Calculus III (Program Requirement)	<b>4</b>
GE Natural Science Elective (with lab) (Recommended: PHYS B211+L, Essentials of Physics I w/Lab)	<b>4</b>	GE Natural Science Elective (lab optional) (Recommended: PHYS B212, Essentials of Physics II, lab optional)	<b>3</b>
ENGL B262 Introduction to Technical Writing (Program requirement, fulfills one GE Liberal Arts Elective)	<b>3</b>	CSCI B280 (MATH B280) Computational Mathematics (Program Requirement; note that this may also be fulfilled by two separate 3-credit courses: MATH B230 Linear Algebra + MATH B242 Differential Equations)	<b>4</b>
<b>Total Semester Hours</b>	<b>15</b>	<b>Total Semester Hours</b>	<b>15</b>
<b>Third Year</b>			
CSCI B350 Intro to Data Structures and Algorithms (formerly "Techniques of Computation") (Major Requirement)	<b>3</b>	CSCI B416 Introduction to Computer Networks (Major Requirement)	<b>3</b>
CSCI B320 Database Management Systems (Major Requirement)	<b>3</b>	CSCI B365 Computer Graphics (Major Requirement)	<b>3</b>
STAT B340 Introduction to Probability and Statistics (Program Requirement)	<b>3</b>	CSCI B422 Data Mining (Major Requirement)	<b>3</b>
Cognate Elective*	<b>3</b>	Cognate Elective*	<b>3</b>
General Education (GE) Elective (Liberal Arts, History, Fine Arts, Social/Behavioral Sciences, Speech, Foreign Language, Global Citizenship & Multicultural Understanding)	<b>3</b>	General Education (GE) Elective (Liberal Arts, History, Fine Arts, Social/Behavioral Sciences, Speech, Foreign Language, Global Citizenship & Multicultural Understanding)	<b>3</b>
<b>Total Semester Hours</b>	<b>15</b>	<b>Total Semester Hours</b>	<b>15</b>
<b>Fourth year</b>			
CSCI B466 Data Visualization (Major Requirement)	<b>3</b>	CSCI B469 High Performance Computing (Major Requirement)	<b>3</b>
CSCI B450 Modeling and Simulation (Major Requirement)	<b>3</b>	CSCI B470 Software System Process and Management (formerly "Software Testing and Verification") (Major Requirement)	<b>3</b>
Cognate Elective*	<b>3</b>	Cognate Elective*	<b>3</b>
General Education (GE) Elective	<b>3</b>	General Education (GE) Elective [if needed] or Free Elective	<b>3</b>
Free Elective	<b>3</b>	Free Elective	<b>3</b>
<b>Total Semester Hours</b>	<b>15</b>	<b>Total Semester Hours</b>	<b>15</b>

\* A cognate is a minimum of 12 hours in advanced-level (200+ level) courses related to, but outside, the major. The cognate is intended to support the coursework in the major. Cognate courses may be drawn from one or more departments, depending on the individual interests and program requirement of the student as determined by the student's major advisor. A cognate differs from a minor in that the courses must be above prerequisite level and may be distributed over more than one subject area. Completion of a cognate is required for graduation but is not recorded on the academic transcript. Requirements for individual cognates are available from the student's academic advisor.

