Sample Course of Study
Computational Science, B.S.

USCB — UNIVERSITY OF SOUTH CAROLINA BEAUFORT

Computational Science BS Degree 4-Year Example Course Plan – Min. Credit Hours Required: 120 (As shown in example below: 121 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.

Fall semester	Cr.	Spring semester	Cr.
First Year			
CSCI B104 Comptr Programming Techniques, Practices, & Tools (Program Requirement)	3	CSCI B150 Introduction to Computer Science (Program Requirement)	3
MATH B115 Pre-Calculus (If necessary as prerequisite for later MATH courses; may fulfill GE Numerical & Analytical Reasoning requirement or Free Elective, as needed)	4	MATH 141 Calculus I (If necessary as prerequisite for later MATH courses; may fulfill GE Numerical & Analytical Reasoning requirement or Free Elective, as needed)	4
ENGL B101 Composition and Rhetoric (GE English Requirement)	3	ENGL B102 Composition and Literature (GE English Requirement)	3
General Education (GE) Elective (Liberal Arts, History, Fine Arts, Social/Behavioral Sciences, Speech, Foreign Language, Global Citizenship & Multicultural Understanding, REACH Act)	3	General Education (GE) Elective (Liberal Arts, History, Fine Arts, Social/Behavioral Sciences, Speech, Foreign Language, Global Citizenship & Multicultural Understanding, REACH Act)	3
General Education (GE) Elective	3	General Education (GE) Elective	3
Total Semester Hours	16	*Total Semester Hours*	16
Second year			
CSCI B145 Object-Oriented Programming I (Program Requirement)	4	CSCI B146 Object-Oriented Programming II (Program Requirement)	4
MATH B142 Calculus II (If necessary as prerequisite for later MATH courses; may fulfill GE Numerical & Analytical Reasoning requirement or Free Elective, as needed)	4	MATH B240 Calculus III (Program Requirement)	4
Cognate Elective*	3	CSCI B240 C++ Programming *(formerly "Introduction to Software Engineering")* (Program Requirement)	3
General Education (GE) Elective (Liberal Arts, History, Fine Arts, Social/Behavioral Sciences, Speech, Foreign Language, Global Citizenship & Multicultural Understanding, REACH Act)	3	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)	4
Total Semester Hours	14	*Total Semester Hours*	15
Third Year			
CSCI B350 Intro to Data Structures and Algorithms (Major Requirement)	3	CSCI B416 Introduction to Computer Networks (Major Requirement)	3
CSCI B320 Database Management Systems (Major Requirement)	3	CSCI B365 Computer Graphics (Major Requirement)	3
STAT B340 Intro to Probability & Statistics (Prog. Req.; *NOTE:* CSCI majors may take STAT B340, normally offered in Fall, **or** they may take STAT B240, normally offered in Spring; however, **CSCI+Math double majors** *must* take STAT **B340**.)	3	CSCI B422 Data Mining (Major Requirement)	3
GE Natural Science Elective (with lab) (CSCI+Math double majors must take **PHYS B211+L**, Essentials of Physics I w/Lab)	3	GE Natural Science Elective (lab optional)	3
General Education (GE) Elective (Liberal Arts, History, Fine Arts, Social/Behavioral Sciences, Speech, Foreign Language, Global Citizenship & Multicultural Understanding, REACH Act)	3	ENGL B262 Introduction to Technical Writing (Program requirement, fulfills one GE Liberal Arts Elective)	3
Total Semester Hours	15	*Total Semester Hours*	15
Fourth year			
CSCI B466 Data Visualization (Major Requirement)	3	CSCI B469 High Performance Computing (Major Requirement)	3
CSCI B450 Modeling and Simulation (Major Requirement)	3	CSCI B470 Software System Process and Management (Major Requirement)	3
Cognate Elective*	3	Cognate Elective*	3
Cognate Elective*	3	General Education (GE) Elective [if needed] or Free Elective	3
General Education (GE) Elective	3	Free Elective	3
Total Semester Hours	15	*Total Semester Hours*	15

* A cognate is a minimum of 12 hours in advanced-level (normally 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 have listed prerequisites and courses 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.

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