

Computer Science, BS

International Engineering Concentration



University of Wyoming, 2016-17

Freshman Fall Semester

	Hrs	Min	Grade	Notes
USP First-Year Seminar	3		C	FY
USP Human Culture (Language *)	4		C	H
COSC 1010 Introduction to Computer Science ^ **	4		C	
MATH 2200 Calculus I ^ ***	4		C	Q
Credit hours subtotal:	15			

Freshman Spring Semester

	Hrs	Min	Grade	Notes
USP Communication I	3		C	C1
USP Human Culture (Language *)	4		C	H
COSC 1030 Computer Science I ^	4		C	
MATH 2205 Calculus II ^	4		C	
Credit hours subtotal:	15			

Sophomore Fall Semester

	Hrs	Min	Grade	Notes
COSC 2030 Computer Science II ^	4		C	
COSC 2150 Computer Organization ^	3		C	
COSC 2300 Discrete Structures ^	3		C	Cross listed with MATH 2300.
Language *	4		C	
Science Series I ^ ****	4			PN
Credit hours subtotal:	18			

Sophomore Spring Semester

	Hrs	Min	Grade	Notes
COSC 3011 Introduction to Software Design ^	3		C	
COSC 3020 Algorithms and Data Structures ^	4		C	
Language *	3		C	
Math Elective I *****	3		C	
Science Series II ^ ****	4			PN
Credit hours subtotal:	17			

This is a guide for course work in the major; actual course sequence may vary by student. Please refer to the online student degree evaluation, and consult with an academic advisor. • Not all courses are offered every semester and some electives may have prerequisites. Students should review the course descriptions in the *University Catalog* and consult with their academic advisor to plan accordingly.

University of Wyoming requirements:

Students must have a minimum cumulative GPA of 2.0 to graduate. • Students must complete 42 hours of upper division (3000-level or above) coursework, 30 of which must be from the University of Wyoming. • Courses must be taken for a letter grade unless offered only for S/U. • University Studies Program (USP) Human Culture (H) and Physical & Natural World (PN) courses must be taken outside of the major subject, but can be cross-listed with the major.

College of Engineering and Applied Science requirements:

Students must have a minimum cumulative GPA of 2.0 in all Engineering courses for graduation. • A grade of C or higher is required for all prerequisite courses. Students must also achieve a grade of C or better in all required mathematics courses.

Computer Science–International Engineering Concentration Program Notes:

All computer science, math, and statistics courses must be completed with a grade of C or better. A grade of C- is not acceptable. • International Engineering students must complete a semester of study abroad, normally in their junior year. Please consult with an academic advisor.

^ Computer Science core courses.

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Junior Fall Semester				Hrs	Min	Grade	Notes
			USP Communication II	3		C	C2
COSC	3015		Functional Programming	3		C	
COSC	4740		Operating Systems Design	4		C	
			Math Elective II *****	3		C	
			Science Elective I *****	4			
Credit hours subtotal:				<u>17</u>			

Junior Spring Semester				Hrs	Min	Grade	Notes
COSC	3050		Ethics for the Computer Professional	1		C	
			COSC Elective I *****	3		C	
			COSC Elective II *****	3		C	
			Science Elective II *****	4		C	
			Upper Division Elective I	3			
Credit hours subtotal:				<u>14</u>			

Senior Fall Semester				Hrs	Min	Grade	Notes
			USP US & Wyoming Constitutions	3			V
COSC	4950		Senior Design I ^	1		C	
STAT	4220		Basic Engineering Statistics	3		C	Can substitute STAT 2010 (Statistical Concepts), STAT 2050 (Fund of Statistics), or STAT 2070 (Intro Stats for the Social Sciences).
			Computer Science Systems Course	3		C	Choose from COSC 4760 (Computer Networks) or COSC 4820 (Database Systems).
			Computer Science Theory Course	3		C	Choose from COSC 4100 (Foundations of Computing) or COSC 4200 (Computability & Complexity).
Credit hours subtotal:				<u>13</u>			

Senior Spring Semester				Hrs	Min	Grade	Notes
			USP Communication III	3		C	C3
COSC	4955		Senior Design II ^	2		C	
			Computer Science Programming Language	3		C	Choose from COSC 4780 (Prin of Programming Language) or COSC 4785 (Compiler Construction).
			COSC Elective III *****	3		C	
			COSC Elective IV *****	3		C	
			Upper Division Elective II	3			
Credit hours subtotal:				<u>17</u>			

TOTAL CREDIT HOURS: 126

Computer Science–International Engineering Concentration Program Notes con't:

* A **single language** must be taken for four (4) semesters or 15 hours to fulfill the foreign language requirement for the program.

- Students taking American Sign Language to fulfill the language requirement for the major will have to take other courses to fulfill the USP H requirements.

** Requires MATH ACT ≥ 25 , MATH SAT ≥ 600 , Math Placement Exam ≥ 4 , or $\geq C$ in MATH 1400 within one year prior to the start of the course. (University standard)

*** Requires MATH ACT ≥ 27 , MATH SAT ≥ 600 , Math Placement Exam ≥ 5 , or $\geq C$ in MATH 1405 or 1450. (University standard)

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Computer Science–International Engineering Concentration Program Notes con't:

**** **Science Series I & II.** Students must complete two courses from a tightly-coupled series, each of which has a lab component and recommended for science or engineering majors. Be aware that the first course in each series has a Math Placement Exam or course prerequisite requirement; please consult the course descriptions in the *University Catalog* for specific information. Courses can be selected from:

CHEM 1020 (General Chemistry I) & CHEM 1030 (General Chemistry II)
CHEM 1050 (Advanced General Chemistry I) & CHEM 1060 (Advanced General Chemistry II)
LIFE 1010 (General Biology I) & LIFE 2022 (Animal Biology) or LIFE 2023 (Biology of Plants & Fungi)
PHYS 1110 (General Physics I) & PHSY 1120 (General Physics II)
PHYS 1210 (Engineering Physics I) & PHYS 1220 (Engineering Physics II)
PHYS 1310 (College Physics I) & PHYS 1320 (College Physics II)

**** **Math Elective I & II.** A total of six (6) additional hours of math course work is required. Students must choose math courses above Calculus II or statistics courses 3000-level or above. Exceptions: MATH 2350 (Business Calculus), MATH 2355 (Mathematical Applications for Business), MATH 4000 (History of Mathematics), or any variable length credit courses cannot be counted toward this requirement.

***** **Science Electives.** Please see the Computer Science Department web page www.uwyo.edu/cosc/undergraduate_students/cosc_degree/ for a current list of approved courses. These course selections must have a lab component and be recommended for science or engineering majors.

***** **Computer Science Electives.** A total of 12 hours of upper division (3000-level or above) computer science electives are required. A maximum of three (3) hours of COSC 3970 (Internship) can be included in this requirement.