

Computer Science, BS

Big Data Concentration



University of Wyoming, 2015-16

Freshman Fall Semester				Hrs	Min	Grade	Notes
			USP First-Year Seminar	3		C	FY
COSC	1010		Introduction to Computer Science ^ *	4		C	
MATH	2200		Calculus I ^ **	4		C	Q
			Science Series I ^ ***	4			PN
Credit hours subtotal:				15			

Freshman Spring Semester				Hrs	Min	Grade	Notes
			USP Communication I	3		C	C1
COSC	1030		Computer Science I ^	4		C	
MATH	2205		Calculus II ^	4		C	
			Science Series II ^ ***	4			PN
Credit hours subtotal:				15			

Sophomore Fall Semester				Hrs	Min	Grade	Notes
			USP Communication 2	3		C	C2
COSC	2030		Computer Science II ^	4		C	
COSC	2150		Computer Organization ^	3		C	
COSC	2300		Discrete Structures ^	3		C	Cross listed with MATH 2300.
MATH	2250		Elementary Linear Algebra	3		C	
Credit hours subtotal:				16			

Sophomore Spring Semester				Hrs	Min	Grade	Notes
			USP Human Culture	3			H
COSC	3011		Introduction to Software Design ^	3		C	
COSC	3020		Algorithms and Data Structures ^	4		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).
			Science Elective I ^ ****	4			
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–Big Data 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. • It is highly recommended that students selecting the big data concentration while majoring in computer science declare a minor in statistics since all course requirements will have been met.

^ Computer Science core courses.

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Junior Fall Semester		Hrs	Min	Grade	Notes
USP US & Wyoming Constitutions		3		V	
COSC	4550	3		C	
STAT	3050	3		C	
Operating Systems Course *****		3		C	
Science Elective II ^ ****		4			
Credit hours subtotal:		16			

Junior Spring Semester		Hrs	Min	Grade	Notes
USP Human Culture		3		H	
COSC	3050	1		C	
COSC	4570	3		C	
COSC	4820	3		C	
STAT	4015	3		C	
Credit hours subtotal:		13			

Senior Fall Semester		Hrs	Min	Grade	Notes
COSC	4450	3		C	
COSC	4555	3		C	
COSC	4950	1		C	
STAT	4045	3		C	
Computer Science Elective I *****		3		C	
Application Area Course Prerequisite		3			May be needed depending upon application area course selected; consult with an academic advisor about options.
Credit hours subtotal:		16			

Senior Spring Semester		Hrs	Min	Grade	Notes
USP Communication III		3		C	C3
COSC	4955	2		C	
STAT	4115	3		C	
Application Area Course *****		3			
Computer Science Elective II *****		3		C	
Credit hours subtotal:		14			

TOTAL CREDIT HOURS: 122

Computer Science–Big Data Concentration Program Notes con't:

* 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)

*** **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)

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Computer Science–Big Data Concentration Program Notes con't:

NOTE: The big data concentration requires the selection of an "application area" course (see page 3); the choice of series can effect the prerequisites needed for the course selected. Please consult the course descriptions in the *University Catalog* for specific information about course prerequisites and discuss with an academic advisor.

**** **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.

***** **Operating Systems Course.** Chose one (1) course from the following options:

COSC 3750 Linux Programming for Systems Applications

COSC 4740 Operating Systems Design

COSC 4750 Systems Programming and Management

***** **Computer Science Electives.** A total of six (6) 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.

***** **Application Area Course.** Select one (1) course from the following options. Additional options may be available; please consult with an academic advisor or see the departmental web site for the most current list of approved courses.

BOT 4550 Computational Biology

CHEM 4560 Molecular Modeling - Computational Chemistry

GEOG 4220 Spatial Modeling and Geocomputation

MOLB 4495 Bioinformatics

PHYS 4830 Mathematical and Computational Physics