

# COMPUTER SCIENCE - BIG DATA CONC

## Academic Year 2019 - 2020

**FALL**

**SPRING**

Course number	Course Title	USP / CMTS	Credits	Min Grade	Grade Earned	Course Number	Course Title	USP / CMTS	Credits	Min Grade	Grade Earned
<b>FRESHMAN YEAR</b>											
COSC 1010	Intro to Computer Science		4	C		COSC 1030	Computer Science I		4	C	
							C in COSC 1010				
MATH 2200	Calculus I	Q	4	C		ENGL 1010	College Composition	C1	3	C	
	C or better in Math 1405 or 1450 or Level 5 on MPE or Math ACT 27 or Math SAT 640						None				
USP-V	US & Wyoming Constitution	V	3			MATH 2205	Calculus II	Q	4	C	
							C or better in Math 2200				
_____ 1101	First Year Seminar	FYS	3	C		STAT	STAT 2010, 2050, or 2070		4		
<b>Total</b>						<b>Total</b>					
<b>14</b>						<b>15</b>					

<b>SOPHOMORE YEAR</b>											
COSC 2030	Computer Science II		4	C		COSC 3011	Intro to Software Design		3	C	
	C in COSC 1030						Spring only C in COSC 2030				
MATH 2300	Discrete Structures		3	C		COSC 3020	Alg & Data Structures		4	C	
	C in COSC 1030 and MATH 2200 or 2350						C in COSC 2030 and COSC 2300				
COSC 2150	Computer Organization		3	C		MATH 2250	Elementary Linear Algebra		3	C	
	Fall only C in COSC 1030						C in Math 2200 or Math 2350				
	Science Elective	PN	4				Science Elective	PN	4	C	
STAT 3050	Statistical Methods		3			USP-H	USP-Human Culture	H	3		
	STAT 2050 or 2070										
<b>Total</b>						<b>Total</b>					
<b>17</b>						<b>17</b>					

<b>JUNIOR YEAR</b>											
COSC 3015	Functional Programming		3	C		COSC 4820	Database Systems		3	C	
	Fall only C in COSC 2030 and COSC 2300						Spring only C in COSC 2030				
COSC 4550	Intro to Artificial Intelligence		3	C		COSC 4555	Machine Learning		3	C	
	Fall only C in COSC 3020						Spring only C in COSC 3020				
STAT	Statistics Minor Elective		3			Prog Lang <sup>5</sup>	Choose one: COSC 4780 or 4785		3	C	
							Spring only				
MATH/SCI	Math/Science Elective		4			STAT	Statistics Minor Elective		3		
	General Elective		3			COM2	USP-Communication 2	C2	3	C	
							C in USP-COM1				
<b>Total</b>						<b>Total</b>					
<b>16</b>						<b>15</b>					

<b>SENIOR YEAR</b>											
COSC 4950	Senior Design I		1	C		COSC 4955	Senior Design II		2	C	
	Fall only C in COSC 3020						Spring only C in COSC 4950				
Op Sys <sup>6</sup>	Choose one: COSC 3750 or 4740		3	C		Theory <sup>7</sup>	Choose one: COSC 4100 or 4200		3	C	
	Fall only C in COSC 3020						Spring only C in COSC 3020				
COSC 4450	Computer Graphics		3	C		COSC 3050	Ethics for Computer Prof		1	C	
	Fall only C in COSC 3020 and MATH 2250						Spring only C in COSC 2030				
ENGL 4010	Technical Writing	C3	3	C		COSC 4570	Data Mining		3	C	
							Spring only C in COSC 4550				
USP-H	USP-Human Culture	H	3			STAT	Statistics Minor Elective		3		
	General Elective		3								
<b>Total</b>						<b>Total</b>					
<b>16</b>						<b>12</b>					

**KEY**

Fall only
Spring only
Prerequisite(s)

- Note 1:** A minimum of 42 credit hours must be upper division.
- Note 2:** Must take a minimum of 30 credit hours of Math/Stats/Science
- Note 3:** All COSC and MATH courses require a minimum of C.
- Note 4:** Math/Science Electives must be courses at or above MATH 2205 or STAT 3000. Cannot count MATH 2205, 2350, 2355, 4000 or any variable credit course.
- Note 5: Programming Language Course:** Choose either COSC 4780, Principles of Programming Languages (pre-req: COSC 3015), or COSC 4785, Compiler Construction (pre-req: COSC 3020).
- Note 6: Operating Systems Course:** Choose either COSC 3750, Linux Programming (pre-req: COSC 3020), or COSC 4740, Operating Systems (pre-req: COSC 3020).
- Note 7: Theory Course:** Choose either COSC 4100, Foundations (pre-req: COSC 3020), or COSC 4200, Computability & Complexity (pre-req: COSC 3020).

**Total Program Credits: 122**