

<b>COMPUTATIONAL DATA SCIENCE CORE REQUIREMENTS</b>				<b>BS-CDS</b>
COURSE #	COURSE TITLE	PREREQUISITE	CR	SEMESTER
CS 1400	Fundamentals of Programming	MAT 1000 or 1010 with a B or higher, CS 1030 recommended	3.0	F,Sp,Su
CS 1410	Object-Oriented Programming	CS 1400 and (MATH 1050 or MATH 1055 with a C+ or higher, or MATH above 1050)	3.0	F,Sp,Su
CS 2300	Discrete Mathematical Structures I	CS 1410 and (MATH 1050 or higher)	3.0	F,Sp,Su
CS 2420	Intro to Algorithms and Data Structures	CS 1410	3.0	F,Sp,Su
CS 2700	Casual Inference		3.0	Sp
CS 3270	Python Software Development	CS 2420 or INFO 2200, COSC and UAS	3.0	Sp
CS 305G	Global Social & Ethical Issues in Computing	ENGL 2010 & (CS 1030 or CS 1400 or INFO 1120 or DGM 1110)	3.0	F, Sp
CS 3320	Numerical Software Development	MATH 1210, COSC, & UAS	3.0	F, Sp
CS 3100	Data Privacy and Security	CS 2420 and UAS	3.0	F,Sp
CS 3520	Database Theory	COSC & UAS	3.0	F,Sp,Su
CS 3530	Data Management For Data Sciences	CS 3520 & UAS	3.0	F, Sp
CS 3800	Data Science Through Statistical Reasoning	ECE 3710, CS 3530, & UAS	3.0	F, Sp
CS 3810	Applied Data Science	CS 3100, CS 3530, & UAS	3.0	F,Sp,Su
CS 3820	Visualization Analytics for Data Science	CS 3530 & UAS	3.0	F, Sp
CS 4700	Machine Learning I	CS 3270, CS 3320 & UAS	3.0	F
CS 4710	Machine Learning II	CS 4700 & UAS	3.0	Sp
CS 4800	Data Science Capstone	CS 3530 & UAS	3.0	Sp
MATH 1220	Calculus II	MATH 1210 or MATH 121H with a grade of C or higher	4.0	F,Sp,Su
MATH 2210	Calculus III	MATH 1220 or MATH 122H with a grade of C or higher	3.0	F,Sp,Su
MATH 2270	Linear Algebra	MATH 1220 or MATH 122H with a grade of C or higher	3.0	F, Sp
STAT 2050	Introduction to Statistical Methods	Within the past two years, MATH 1050 or MATH 1055 or MATH 1080 with a grade of C or higher or appropriate math placement test score.	4.0	F, Sp
ECE 3710	Applied Probability & Statistics for Engineers	MATH 1210 and UAS	3.0	F,Sp,Su
CDS ELECTIVES	Complete 12 credits (4 courses from another discipline, at least 6 credits of which must be 3000 level or higher.)	Requires department head approval. Any CS 3000 or 4000 level course not already required. See advisor.	12.0	varies
Core Credit Required			80	

- *Minimum grade of "C-" required unless a higher grade is designated.*

**UAS - University Advanced Standing Requirement:** Before students can register for upper-division coursework (3000 or higher), they must qualify for University Advanced Standing (UAS) by:

- Completing, and/or transferring in, at least 24 credits of college-level coursework (1000 or higher);
- Having a cumulative GPA of 2.0 or higher;
- Complete Quantitative Literacy, (MAT 1030 or higher) and ENGL 2010 or equivalent.

NOTE: For each of the following, a maximum of three hours may be counted towards graduation without prior written CS Department approval: CS 339R, CS 439R, CS 479R, CS 481R, CS 489R, CS 491R, and CS 496R.

**GENERAL EDUCATION REQUIREMENTS**

COURSE #	COURSE TITLE	PREREQUISITE	CR
ENGL 1010 OR ENGH 1005	Introduction to Writing Literacies and Compositions Across Contexts CC	ENGL 1000 with C- or higher (or appropriate test scores within 5 yrs.) ENGH 0890 (or appropriate placement scores.)	3.0
ENGL 2010	Intermediate Writing	Completion of ENGL 1010 or ENGL 101H with a grade of C- or higher, or ENGH 1005 with a grade of C or higher. (Or appropriate ACT test scores taken within the last 3 years.)	3.0
MATH 1210	Calculus I QL	One of the following within the past 2 years: (MATH 1050 or MATH 1055) & MATH 1060, each with a grade of C or higher; OR MATH 1080 with a grade of C or higher; OR by appropriate math placement score.	5.0
AMERICAN INSTITUTIONS Choose option 1 or 2	1. (One class) HIST 1700 American Civilization, or HIST 1740 US Economic History, or POLS 1000 American Heritage, or POLS 1100 American National Gov't 2. (Two classes) US History (HIST 2700 & HIST 2710)		3.0
HLTH1100 or PES1097	Personal Health & Wellness or Fitness for Life		2.0
PHIL 2050	Ethics & Values	ENGL 1010. ENGL 2020 highly recommended	3.0
HUMANITIES DISTRIBUTION	COMM 1020 & 1025	Public Speaking and Lab are Required. A grade of C- or higher is required.	3.0
<b>THIRD SCIENCE DISTRIBUTION—Complete one of the following:</b>			5.0
CHEM 1210 & 1215	Principles of Chemistry I and Lab	MATH 1080, 1050, 1055 with C- or better or placement into 1060 or higher, (CHEM 1010 or high school recommended.) Corequisite: CHEM 1215	
BIOL 1610 & 1615	College Biology I and Lab	ACT (or equivalent) composite score of 21+, or completion of ENGL1010 (or higher) with a minimum grade of C-	
PHYS 2020 & 2025	Physics for Scientists and Engineers I and Lab	PHYS 2010 Corequisite(s): PHYS 2025	
PHYS 2220 & 2225	Physics for Scientists and Engineers II and Lab	PHYS 2210 Corequisite(s): PHYS 2225 and Pre or Corequisite: MATH 1220	
FINE ARTS DISTRIBUTION (see Wolverine Track for class list)			3.0
SOCIAL/BEHAVIORAL SCIENCE DISTRIBUTION	COMM 2110	Interpersonal Communication is Required. A grade of C- or higher is required.	3.0
BIOLOGY SCIENCE DISTRIBUTION (see Wolverine Track for class list)			3.0
PHYSICAL SCIENCE DISTRIBUTION	PHYS 2210 and 2215	Physics for Scientists and Engineers I and Lab Required. A grade of C- or higher is required.	5.0
			GE Credits Required
			41
			Core Credits Required
			79
Total Credits Required for Degree:			120

**GRADUATION REQUIREMENTS:**

1. Completion of a minimum of 120 semester credits, with a minimum of 40 upper-division credits.
2. Overall grade point average of 2.0 or above.
3. Must have a minimum grade of C- with a combined GPA of 2.5 or higher in all discipline requirements and the General Education requirements that are marked with an \*.
4. Residency hours - - minimum of 30 credit hours through course attendance at UVU. 10 of these hours must be within the last 45 hours earned. At least 12 of the credit hours earned in residence must be in approved Computational Data Science (CDS)
5. All transfer credit must be approved in writing by UVU courses.
6. No more than 80 semester hours and no more than 20 hours in CDS-type courses of transfer credit from a two-year college.
7. No more than 30 semester hours may be earned through independent study and/or extension classes.
8. Successful completion of at least one Global/Intercultural course. CS 305G satisfies this requirement.