UTAH VALLEY UNIVERSITY

COLLEGE OF ENGINEERING AND TECHNOLOGY
COMPUTER SCIENCE DEPARTMENT
BACHELOR OF SCIENCE DEGREE
2019-2020 SOFTWARE ENGINEERING

COMPUTER SCIENCE CORE REQUIREMENTS				
COURSE #	**COURSE TITLE**	**PREREQUISITE**	**CR**	
CS 1400◆	Fundamentals of Programming	MAT 1000 or 1010 or math test score. CS 1030 recommended	3	F, Sp, Su
CS 1410◆	Object-Oriented Programming	CS 1400	3	F, Sp, Su
CS 2300◆	Discrete Mathematical Structures I	CS 1410 and (MATH 1050 or higher)	3	F, Sp, Su
CS 2420◆	Intro to Algorithms and Data Structures	CS 1410	3	F, Sp, Su
CS 2450*	Software Engineering	CS 2300, CS 2420	3	F, Sp, Su
CS 2600*	Computer Networks I	CS 2810 or (INFO 1200 and IT 1600)	3	F, Sp
CS 2690*	Computer Networks II	CS 1410, CS 2300, CS 2600, **Pre- or Corequisite:** MATH 1210	3	F, Sp
CS 2810*	Computer Organization and Architecture	CS 1400	3	F, Sp, Su
CS 305G*	Global Social & Ethical Issues in Computing	ENGL 2010 & (CS 1030 or CS 1400 or INFO 1120 or DGM 1110)	3	F, Sp
CS 3060*	Operating Systems Theory	CS 2810, COSC	3	F, Sp
CS 3240*	Discrete Mathematical Structures II	CS 2810, COSC	3	F, Sp
CS 3320*	Numerical Software Development	COSC		F, Sp
CS 3250* or 3260* or 3270* or 3370* or 3380*	Java Software Development CsharpNET Software Development Python Software Development C++ Software Development JavaScript Software Development	COSC COSC COSC CS 2810, COSC CS 2550, COSC	3	F F, Sp Sp F, Sp F
CS 3410*	Human Factors in Software Development	(CS 3250 or CS 3260 or CS 3370 or INFO 2200)	3	F
CS 3450*	Principles and Patterns of Software Design	(CS 3250 or CS 3260 or CS 3270 or CS 3370)	3	F, Sp
CS 3520*	Database Theory	COSC	3	F, Sp, Su
CS 4230*	Software Testing and Quality Engineering	CS 2450, (CS 3250 or CS 3260 or CS 3270 or CS 3370), ECE 3710	3	F
CS 4400*	Software Engineering II	CS 2450, CS 2600, CS 3520, & (CS 3250 or CS 3260 or CS 3270 or CS 3370) **Pre- or Corequisite:** CS 3450	3	F
CS 4450*	Analysis of Programming Languages	CS 3240, (CS 3250 or CS 3260 or CS 3270 or CS 3370)	3	F
CS 4550*	Software Engineering III	CS 4230, CS 4400	3	Sp
CS 496R*	Senior Seminar (1 credit needed for graduation.)	CS 2450, CS 2690, CS 2810, CS 3240, CS 3250 & at least one of the following: (CS 3250 or CS 3260 or CS 3270 or CS 3370 or CS 3380)	1	F, Sp
ECE 3710*	Applied Probability & Stats for Engineers	MATH 1210	3	F, Sp, Su
Complete 15 credits from the following: Any CS course numbered CS 3000 or higher not already required*.			15	

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.

COSC: Matriculation into Advanced Standing required: (CS 1400, 1410, 2300, 2420 Min grade C+) & (MATH 1210, ENGL 1010 Min grade C). Each class cannot be taken more than twice to obtain the required grade.

Advisors:

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GENERAL EDUCATION REQUIREMENTS			
COURSE #	**COURSE TITLE**	**PREREQUISITE**	**CR**
ENGL 1010◆	Introduction to Writing	ENGH 1000 with C- or higher (or appropriate test scores within 5 years)	3
ENGL 2010	Intermediate Writing	ENGH 1010 with C- or higher (or appropriate test scores within 5 years)	3
MATH 1210◆	Calculus I	One of the following within the past two years: (MATH 1050 or MATH 1055) and MATH 1060, each with a grade of C or higher; MATH 1080 with a grade of C or higher; appropriate placement by math placement test.	5
American Institutions: HIST 1700 American Civilization or HIST 1740 US Economic History or POLS 1000 American Heritage or POLS 1100 American National Gov't or HIST 2700 & HIST 2710 US History			3
HLTH 1100 PES 1097	Personal Health & Wellness Fitness for Life		2
PHIL 2050	Ethics & Values	ENGL 1010. (ENGL 2010 highly recommended)	3
COMM 1020*	Public Speaking	COMM 1020 required for Computer Science also counts as Humanities	3
COMM 2110*	Interpersonal Communication	COMM 2110 required for Computer Science also counts as Humanities	3
PHYS 2210* & 2215* Physics for Scientists and Engineers I & Lab		MATH 1210	5
Complete **one** of the following course/lab combinations:* BIOL 1610 & 1615 College Biology I & Lab (5) CHEM 1210 & 1215 Principles of Chemistry I & Lab (5) GEO 1010 & 1015 & 202R Introduction to Geology & Labs (5) PHYS 2020 & 2025 College Physics II & Lab (5) PHYS 2220 & 2225 Physics for Scientists & Engineers II & Lab (5)		ACT composite score of 21+, or completion of ENGL1010 (or higher) with a minimum grade of C- MATH 1050, prior chemistry experience highly recommended. PHYS 2010 (or PHYS 2210 & PHYS Dept. Approval) PHYS 2210 & MATH 1220	5
Fine Arts Distribution (choose from list below)			3
Biology Science Distribution (choose from list below)			3
Total Credits Required for Degree:			120

*** Minimum grade of C- required in courses marked with asterisk**

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.

FINE ARTS (FF)
ART 1010 Introduction to Visual Art
ART 1020 Basic Drawing for Non-Majors
ART 1050 Photography I
ART 1110 Drawing I
ART 1340 Sculpture I
ART 1350 Ceramics I
ART 1650 Watermedia I
ART 3400 Fund of Art Education
ARTH 2710 Hist of Art to the Renaissance
ARTH 271H Hist of Art to the Renaissance
ARTH 2720 Hist of Art from Renaissance
ARTH 272H Hist of Art from Renaissance
DANC 1010 Dance as an Art Form
DANC 2110 Orientation to Dance
EGDT 1720 Architectural Rendering
MUSC 1010/101H Intro to Music
MUSC 1030 American Popular Music
MUSC 1100 Fundamental of Music
THEA 1013 Intro to Theater
THEA 1023 Intro to Film
THEA 1033 Acting I
THEA 2311 Film History I

BIOLOGY (BB)
BIOL 1010/101H General Biology
BIOL 1070 Genetics
BIOL 1200 Prehistoric Life
BIOL 1500 Biological Anthropology
BIOL 1610 College Biology I
BIOL 1620 College Biology II
*BIOL 204R Natural History Excursion
BIOL 2500 Environment Biology
BOT 2050 Field Botany
BOT 2100 Flora of Utah
BOT 2400 Plant Kingdom
BTEC 1010 Fund in Biotech I Career Surv
HLTH 3400 Human Diseases
MICR 2060 Microbiology for Health Prof
NUTR 2020 Nutrition Through Life Cycle
ZOOL 1090 Intro Human Anat/Phys
ZOOL 2320/232H Human Anatomy

◆ Matriculation into Advanced Standing (COSC) Requirements
Students must be Formally Matriculated to this program before they can graduate. *Please see your advisor for more information*
Completion of the following:
- CS 1400 Minimum grade C+
- CS 1410 Minimum grade C+
- CS 2300 Minimum grade C+
- CS 2420 Minimum grade C+
- MATH 1210 Minimum grade C
- ENGL 1010 Minimum grade C

Overall UVU GPA of 2.5 or higher. Each class cannot be taken more than twice to obtain the required grade.

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. Must have a minimum grade of C- with a combined GPA of 2.5 or higher in all discipline core and elective requirements and the General Education requirements marked with an asterisk *.
3. Residency hours -- minimum of 30 credit hours through course attendance at UVU. Ten 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 CSE Department courses.
4. No more than 80 semester hours and no more than 20 hours of transfer credit from a two-year college may be applied to the core or elective courses.
5. No more than 6 semester hours may be earned through independent study.
6. Successful completion of at least one Global/Intercultural course.