

Software Engineering, B.S.

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Requirements

Software Engineers design and develop large software systems. In addition, they may lead teams of software developers or quality assurance engineers. They also work with users and customers to understand their needs. Software systems we take for granted, such as Microsoft Office, are implemented by software engineers. Software engineers employ innovative software development approaches, such as Agile software development, to effectively manage software development projects.

Total Program Credits: 120

Matriculation Requirements:			
<ol style="list-style-type: none"> 1. Completion of CS 1400, CS 1410, CS 2300, and CS 2420 with a grade of C+ better. 2. Completion of MATH 1210 and (ENGL 1010 or ENGH 1005) with a grade of C or better. 3. Each of CS 1400, CS 1410, CS 2300, CS 2420, MATH 1210, and (ENGL ENGL 1010 or ENGH 1005) cannot be taken more than twice to obtain the required grade. 4. Overall GPA of 2.5 or higher. 			
General Education Requirements:			41 Credits
	ENGL 1010	Introduction to Academic Writing CC	3
or	ENGH 1005	Literacies and Composition Across Contexts CC (5)	
	ENGL 2010	Intermediate Academic Writing CC	3
	MATH 1210	Calculus I QL ¹	4
	STAT 2050	Introduction to Statistical Methods	4
American Institutions, complete one of the following:			3
	HIST 1740	US Economic History AS (3)	
	HIST 1700	American Civilization AS (3)	
	POLS 1000	American Heritage SS (3)	
	POLS 1100	American National Government AS (3)	
	HIST 2700	US History to 1877 AS (3)	
and	HIST 2710	US History since 1877 AS (3)	
Complete the following:			
	PHIL 2050	Ethics and Values IH	3

	HLTH 1100	Personal Health and Wellness TE	2
or	EXSC 1097	Fitness for Life TE (2)	
Distribution Requirements:			
	PHYS 2210	Physics for Scientists and Engineers I PP (4)	5
and	PHYS 2215	Physics for Scientists and Engineers I Lab (1)	
Biology			3
Complete one of the following additional GE course/lab combinations:			5
	BIOL 1610	College Biology I BB (4)	
and	BIOL 1615	College Biology I Laboratory (1)	
	CHEM 1210	Principles of Chemistry I PP (4)	
and	CHEM 1215	Principles of Chemistry I Laboratory (1)	
	PHYS 2020	College Physics II PP (4)	
and	PHYS 2025	College Physics II Lab (1)	
	PHYS 2220	Physics for Scientists and Engineers II PP (4)	
and	PHYS 2225	Physics for Scientists and Engineers II Lab (1)	
	GEO 1010	Introduction to Geology PP (3)	
and	GEO 1015	Introduction to Geology Laboratory (1)	
and	GEO 202R	Science Excursion (1)	
Fine Arts			3
	COMM 1020	Public Speaking HH ¹	3
	COMM 2110	Interpersonal Communication SS ¹	3
Discipline Core Requirements:			67 Credits
	CS 1400	Fundamentals of Programming	3
	CS 1410	Object-Oriented Programming	3

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	CS 2300	Discrete Mathematical Structures I	3
	CS 2370	C plus plus Programming WE	3
	CS 2810	Computer Organization and Architecture	3
	CS 2420	Introduction to Algorithms and Data Structures	3
	CS 2450	Software Engineering	3
	CS 2600	Computer Networks I	3
	CS 2690	Computer Networks II	3
	CS 305G	Global Social and Ethical Issues in Computing GI WE	3
	CS 3060	Operating Systems Theory	3
	CS 3100	Data Privacy and Security	3
	CS 3240	Discrete Mathematical Structures II	3
	CS 3320	Numerical Software Development	3
Complete one of the following:			3
	CS 3250	Java Software Development (3)	
or	CS 3370	C Plus Plus Software Development (3)	
or	CS 3260	CsharpNET Software Development (3)	
or	CS 3270	Python Software Development (3)	
or	CS 3380	JavaScript Software Development (3)	
Complete the following:			
	CS 3450	Principles and Patterns of Software Design	3
	CS 3410	Human Factors in Software Development	3
	CS 3520	Database Theory	3

	CS 4230	Software Testing and Quality Engineering	3
	CS 4400	Software Engineering II	3
	CS 4450	Analysis of Programming Languages	3
	CS 4550	Software Engineering III	3
	CS 496R	Senior Seminar	1
Elective Requirements:			9 Credits
Complete 9 credits from the following:			9
	Any CS course numbered 3000 or higher not already required.		

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 a footnote 1.
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.

Footnotes: ¹ Minimum grade of C- required.

Software Engineering, B.S. Graduation Plan

This graduation plan is a sample plan and is intended to be a guide. Your specific plan may differ based on your Math and English placement and/or transfer credits applied. You are encouraged to meet with an advisor and set up an individualized graduation plan in Wolverine Track.

Semester 1	Course Title	Credit Hours
CS 1400	Fundamentals of Programming	3
MATH 1210	Calculus I QL	4
ENGL 1010 or ENGH 1005	Introduction to Academic Writing CC or Literacies and Composition Across Contexts CC	3
GE		3
	Semester total:	13
Semester 2	Course Title	Credit Hours
CS 1410	Object Oriented Programming	3
CS 2810	Computer Organization & Architecture	3
STAT 2050	Introduction to Statistical Methods	4
ENGL 2010	Intermediate Academic Writing CC	3
GE		3
	Semester total:	16
Semester 3	Course Title	Credit Hours
CS 2420	Introduction to Algorithms & Data Structures	3
CS 2300	Discrete Mathematical Structures I	3
CS 2370	C plus plus Programming WE	3
HLTH 1100 or EXSC 1097	Personal Health and Wellness TE or Fitness for Life TE	2
PHYS 2210	Physics for Scientists and Engineers I PP	4
PHYS 2215	Physics for Scientists and Engineers I Lab	1
	Semester total:	16
Semester 4	Course Title	Credit Hours
CS 2450	Software Engineering I	3
CS 2600	Computer Networks I	3
	Complete one of the following:	3
CS 3250	Java Software Development	
or CS 3260	CsharpNET Software Development	
or CS 3270	Python Software Development	
or CS 3370	C Plus Software Development	
COMM 1020	Public Speaking	3
Third Science		5
	Semester total:	17
Semester 5	Course Title	Credit Hours
CS 2690	Computer Networks II	3
CS 3410	Human Factors in Software Development	3
CS 3100	Data Security and Privacy	3

CS Elective		3
PHIL 2050	Ethics and Values IH	3
	Semester total:	15
Semester 6	Course Title	Credit Hours
CS 3060	Operating Systems Theory	3
CS 3240	Discrete Mathematical Structures II	3
CS 3450	Principles & Patterns of Software Design	3
CS 3520	Database Theory	3
CS Elective		3
	Semester total:	15
Semester 7	Course Title	Credit Hours
CS 4450	Analysis of Programming Languages	3
CS 4400	Software Engineering II	3
CS 4230	Software Testing & Quality Engineering	3
GE		3
CS Elective		3
	Semester total:	15
Semester 8	Course Title	Credit Hours
CS 305G	Global Social and Ethical Issues in Computing GI WE	3
CS 3320	Numerical Software Development	3
CS 4550	Software Engineering III	3
CS 496R	Senior Seminar	1
COMM 2110	Interpersonal Communication SS	3
	Semester total:	13
	Degree total:	120