Computer Science - Secure Computing Emphasis, B.S.

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Requirements

The Bachelor of Science in Computer Science with Secure Computing emphasis is a degree to provide a solid foundation in secure computing and develop advanced skills to master the technical details to develop complex systems securely. It consists mainly of 36 credit hours of security-focused classes, 30 core computer science classes, plus several additional computer sciences elective courses to have the greatest practical applicability. The degree will highly qualify students to meet the high-demand workforce in the security domain.

Total Program Credits: 120

Matriculation Requirements:			
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 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:			33 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
American Institutions: Complete one of the following:			3
	HIST 2700	US History to 1877 AS (3)	
and	HIST 2710	US History since 1877 AS (3)	
	HIST 1700	American Civilization AS (3)	
	HIST 1740	US Economic History AS (3)	
	POLS 1000	American Heritage SS (3)	
	POLS 1100	American National Government AS (3)	
Complete the following:			
	PHIL 2050	Ethics and Values IH	3
	HLTH 1100	Personal Health and Wellness AS (2)	
or	EXSC 1097	Fitness for Life AS	2
Distribution Courses:			
	COMM 1020	Public Speaking HH [1]	3
	COMM 2110	Interpersonal Communication SS [1]	3
	Fine Arts Distribution (Choose from list)		3
	Biology (Choose from list)		3
	Physical Science (Choose from list)		3
	Additional GE to be completed in the core.		
Discipline Core Requirements:			54 Credits
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)	
or	CHEM 1210	Principles of Chemistry I PP (4)	
and	CHEM 1215	Principles of Chemistry I Laboratory (1)	
or	PHYS 2020	College Physics II PP (4)	
and	PHYS 2025	College Physics II Lab (1)	
or	PHYS 2220	Physics for Scientists and Engineers II PP (4)	
and	PHYS 2225	Physics for Scientists and Engineers II Lab (1)	
or	GEO 1010	Introduction to Geology PP (3)	
and	GEO 1015	Introduction to Geology Laboratory (1)	
and	GEO 202R	Science Excursion (1)	
Minimum grade of C- required in these courses.			
	CS 1400	Fundamentals of Programming	3
	CS 1410	Object-Oriented Programming	3

	CS 2300	Discrete Mathematical Structures I	3
	CS 2370	C plus plus Programming WE	3
	CS 2420	Introduction to Algorithms and Data Structures	3
	CS 2550	Web Programming I	3
	CS 2600	Computer Networks I	3
	CS 2690	Computer Networks II	3
	CS 2810	Computer Organization and Architecture	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
	CS 3520	Database Theory	3
	STAT 2050	Introduction to Statistical Methods	4
Emphasis Requirements:			33 Credits
	CS 2450	Software Engineering	3
	Complete one of the following:		3
	CS 3250	Java Software Development (3)	
or	CS 3260	CsharpNET Software Development (3)	
or	CS 3270	Python Software Development (3)	
or	CS 3370	C Plus Plus Software Development (3)	
or	CS 3380	JavaScript Software Development (3)	
	Complete the following:		
	IT 3510	Advanced System Administration--Linux/UNIX	3
	CS 3110	Applied Cryptography	3
	CS 3120	Ethical Hacking Tools Dev	3
	CS 3140	Network and Cloud Security	3
or	INFO 4425	Web and Application Security	
	CS 4120	Security Vulnerability Analysis	3
or	IT 3750	Malware Reverse Engineering	
	CS 4200	Secure Computing Capstone	3
	Complete 12 credits from any CS 3000 or 4000 level course not already required. (Minimum grade of C- required in these courses.)		12

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 emphasis requirements and the General Education requirements marked with a footnote.
3. 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 CSE Department courses.
4. All transfer credit must be approved in writing by UVU.
5. No more than 80 semester hours and no more than 20 hours in CS type courses of transfer credit from a two-year college.
6. No more than 30 semester hours may be earned through independent study and/or extension classes.
7. Successful completion of at least one Global/Intercultural course.

Footnote:
[1] Minimum grade required (see Graduation Requirements)

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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
ENGL 1010 or ENGH 1005	Introduction to Writing CC or Literacies and Composition Across Contexts CC	3
MATH 1210	Calculus I QL	4
GE		3
HLTH 1100 or EXSC 1097	Personal Health and Wellness TE or Fitness for Life TE	2
	Semester total:	15
Semester 2	Course Title	Credit Hours
CS 1410	Object-Oriented Programming	3
CS 2810	Computer Organization and Architecture	3
ENGL 2010	Intermediate Academic Writing CC	3
GE		3
STAT 2050	Introduction to Statistical Methods	4
	Semester total:	16
Semester 3	Course Title	Credit Hours
CS 2300	Discrete Mathematical Structures I	3
CS 2420	Introduction to Algorithms and Data Structures	3
CS 2370	C plus plus Programming WE	3
CS 2600	Computer Networks I	3
GE		3
	Semester total:	15
Semester 4	Course Title	Credit Hours
CS 2450	Software Engineering	3
CS 2550	Web Programming I	3
CS 2690	Computer Networks II	3
PHYS 2210	Physics for Scientists and Engineers I PP	4
PHYS 2215	Physics for Scientists and Engineers I Lab	1
	Semester total:	14
Semester 5	Course Title	Credit Hours
CS 3100	Data Privacy and Security	3
IT 3510	Advanced System Administration--Linux/ UNIX	3
CS 3240	Discrete Mathematical Structures II	3
CS 3520 or 3250 or 3260 or 3270 or 3370 or 3380	Database Theory or Java Software Development or CsharpNET Software Development or Python Software Development or C Plus Plus Software Development or JavaScripts Software Development	3
CS Elective		3
	Semester total:	15
Semester 6	Course Title	Credit Hours
CS 3060	Operating Systems Theory	3
CS 3110	Applied Cryptography	3
CS 3320	Numerical Software Development	3
CS Elective		3
GE		3
	Semester total:	15
Semester 7	Course Title	Credit Hours
CS 3120	Ethical Hacking Tools Dev	3
CS 3140 or INFO 4425	Network and Cloud Security or Web and Application Security	3
CS Elective		3
PHIL 2050	Ethics and Values IH	3
COMM 1020	Public Speaking HH	3
	Semester total:	15
Semester 8	Course Title	Credit Hours
CS 4120 or IT 3750	Security Vulnerability Analysis or Malware Reverse Engineering	3
CS 305G	Global Social and Ethical Issues in Computing GI WE	3
CS 4200	Secure Computing Capstone	3
CS Elective		3
COMM 2110	Interpersonal Communication SS	3
	Semester total:	15
	Degree total:	120