## LIBERTY UNIVERSITY

Software Engineering Cognate

2022-2023 Degree Completion Plan

**Important:** This degree plan is effective for those starting this degree program in fall 2022 through summer 2023. This degree plan will remain in effect for students who do not break enrollment or who do not change degree programs, concentrations or cognates.

**GENERAL EDUCATION/** FOUNDATIONAL SKILLS REQUIREMENTS (46-49 hours) Course Hrs Grade Grade Course Hrs Sem Sem Communication & Information Literacy (13 hours)<sup>1</sup> Major Foundational Courses (0-20 hours) **ENGL 101** Composition & Rhetoric 3 BUSI 240 Organizational Behavior I4 Inquiry 101 CSCN 110 INQR 101 1 Introduction to Computer Sciences<sup>4</sup> 3 3 Communications Elective 3 CSCN 111 Programming in C++ Beginner<sup>4</sup> Technical Communication<sup>4</sup> 3 **ENGR 270** 3 Information Literacy Elective Information Literacy Elective MATH 131 Calculus & Analytical Geometry I4 3 **PHYS 201** General Physics I4 Technological Solutions & Quantitative Reasoning (5-8 hours)<sup>1</sup> **UNIV 101** Foundational Skills MAJOR MATH Math Elective (MATH 114 or higher) 4 Core (42 hours) Technology Competency<sup>2</sup> 0 - 3CSCN 112 Programming in C++ Advanced<sup>5</sup> **CSCN 215** Data Structures & Algorithms Using C++<sup>5</sup> Critical Thinking (8 hours)<sup>1</sup> CSCN 230 Business Data Communications & Networks<sup>5</sup> Intr Bwvw/Contemp Moral Issues<sup>3</sup> CSCN 326 Database Design & Management<sup>5</sup> **RLGN 105** 2 RSCH 201 Research 201 3 CSCN 342 Computer Architecture<sup>5</sup> Linux Operating Systems<sup>5</sup> Critical Thinking Elective CSCN 345 CSCN 352 Windows System Administration<sup>5</sup> Network Architecture, Protocols, & Theory<sup>5</sup> Civic & Global Engagement (5 hours)<sup>1</sup> CSCN 355 Program Language Design & Comp Theory<sup>5</sup> EVAN 101 Evangelism & Christian Life<sup>3</sup> CSCN 434 Cultural Studies Elective CSCN 443 Operating Systems Design<sup>5</sup> CSCN 461 Aspects of Computer Security - Defensive<sup>5</sup> Social & Scientific Inquiry (7 hours)<sup>1</sup> CSCN 471 Software Engineering Management5 Natural Science Elective **CSCN 481** Computer Science Practicum I5 3 Social Science Elective CSCN 482 Computer Science Practicum II<sup>5</sup> Christianity & Contexts (8 hours)<sup>1</sup> Cognate (12 hours) BIBL 105 Old Testament Survey **BUSI 427** Team Dynamics<sup>5</sup> 3 New Testament Survey BIBL 110 CSCN 315 Front-end Programming in JavaScript<sup>5</sup> 3 CSCN 316 **THEO 201** Theology Survey I3 Server-Side Programming<sup>5</sup> **THEO 202** Theology Survey II<sup>3</sup> CSCN 375 Human-Computer Interaction<sup>5</sup> Quantitative Studies Courses (13 hours) Elem. Functions & Coordinate Geometry<sup>6</sup> MATH 128 **MATH 211** Introduction to Statistical Analysis MATH 250 Introduction to Discrete Mathematics **MATH 350** Discrete Mathematics Lab Sciences Courses (4 hours) Lab Science Elective

Technical Elective Courses (3 hours)<sup>8</sup>

Notes

All applicable prerequisites must be met

<sup>1</sup>Refer to the list of approved general education electives at <u>www.liberty.edu/gened</u> before enrolling in foundational skills requirements

All students must pass the Computer Assessment OR complete applicable INFT course; refer to www.liberty.edu/computerassessment for more information

<sup>3</sup>Students transferring in 45 or more UG credit hours will have the requirements of RLGN 105 & EVAN 101 waived; Students transferring in 60 or more UG credit hours will also have the requirements of THEO 201 & THEO 202 waived

<sup>4</sup>Courses may also fulfill select General Education Requirements. Please refer to the list of approved general education electives at <u>www.liberty.edu/gened</u>

Students are required to take these courses residentially in support of ABET accreditation Exceptions may be made on a case by case basis, and require ABET coordinator review and Department Chair approval.

<sup>6</sup>Any student entering the major directly into MATH 131 will require a 4 credit MATH Elective to substitute in place of MATH 128 (for example, MATH 132 may sub for credit) <sup>7</sup>Choose any science course which includes a lab component. If choosing a Physics course, it must be PHYS 202 and 202L, or a higher level Physics course. PHYS 101 and 103 are not allowable.

<sup>8</sup>Choose from: BUSI 300, 301, 313, 424, 427, any 200-400 level Computer Science course, any 200-400 level Engineering course (except ENGR 210), or any Advanced Math course (must be MATH 132 or higher) not already required by the degree. Suggested Course Sequence on second page

CSER All requirements must be satisfied before a degree will be awarded

## SUGGESTED COURSE SEQUENCE

## FRESHMAN YEAR

First Semester		Second Semester	
ENGL 101	3	BIBL 105	2
EVAN 101	2	RSCH 201	3
INQR 101	1	UNIV 101	1
RLGN 105	2	Information Literacy Elective <sup>1</sup> [CSCN 111]	3
Information Literacy Elective <sup>1</sup> [CSCN 110	0] 3	Math Elective <sup>1</sup> [MATH 131]	4
Technology Competency <sup>2</sup>	0-3	CSCN 230	3
MATH 128 <sup>3</sup>	4	CSER	<u>0</u>
CSER	<u>0</u>	Tot	tal 16
	Total15-18		

SOPHOMORE YEAR					
BIBL 110	2	Social Science Elective <sup>1</sup> [BUSI 240]	3		
Communications Elective <sup>1</sup> [ENGR 270]	3	CSCN 215	3		
CSCN 112	3	CSCN 352	3		
CSCN 345	3	CSCN 355	3		
MATH 250	3	MATH 350	3		
CSER	<u>0</u>	CSER	<u>0</u>		
	Total 14		Total 15		

JUNIOR YEAR					
Natural Science Elective <sup>1</sup> [PHYS 201]	4	BUSI 427	3		
CSCN 342	3	CSCN 315	3		
CSCN 375	3	CSCN 326	3		
CSCN 461	3	CSCN 471	3		
MATH 211	3	Lab Science Elective <sup>4</sup>	4		
CSER	<u>0</u>	CSER	<u>0</u>		
	Total 16		Total 16		

SENIOR YEAR					
THEO 201	2	THEO 202	2		
CSCN 316	3	Critical Thinking Elective <sup>1</sup>	3		
CSCN 434	3	Cultural Studies Elective <sup>1</sup>	3		
CSCN 443	3	CSCN 482	3		
CSCN 481	3	Technical Elective <sup>5</sup>	3		
CSER	<u>0</u>	CSER	<u>0</u>		
	Total 14		Total 14		

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<sup>3</sup>Any student entering the major directly into MATH 131 will require a 4 credit MATH Elective to substitute in place of MATH 128 (for example, MATH 132 may sub for credit)

<sup>4</sup>Choose any science course which includes a lab component. If choosing a Physics course, it must be PHYS 201 and 202L, or a higher level Physics course. PHYS 101 and 103 are not allowable. <sup>5</sup>Choose from: BUSI 300, 301, 313, 424, 427, any 200-400 level Computer Science course, any 200-400 level Engineering course (except

ENGR 210), or any Advanced Math course (must be MATH 132 or higher) not already required by the degree.