LIBERTY UNIVERSITY

GENERAL EDUCATION/

Bachelor of Science in Computer Science Data Science Cognate

2023-2024 Degree Completion Plan

Important: This degree plan is effective for those starting this degree program in fall 2023 through summer 2024. This degree plan will remain in effect for students who do not break enrollment or who do not change degree programs, concentrations or cognates.

FOUNDATIONAL SKILLS REQUIREMENTS (46-49 hours) Sem Grade Course Hrs Sem Grade Course Hrs Communication & Information Literacy (13 hours)¹ Major Foundational Courses (0-20 hours) Composition & Rhetoric Organizational Behavior & Management⁴ **ENGL** 101 3 BUSI 240 3 **INQR** 101 Inquiry 101 1 **CSCN 110** Introduction to Computer Sciences⁴ 3 Programming in C++ Beginner⁴ CSCN 111 3 Communications Elective 3 Information Literacy Elective 3 ENGR 270 Technical Communication⁴ 3 Information Literacy Elective **MATH 131** Calculus & Analytical Geometry I4 3 PHYS 201 General Physics I4 Technological Solutions & Quantitative Reasoning (5-8 hours)¹ **UNIV 101** Foundational Skills MAJOR -1 MATH Math Elective (MATH 114 or higher) 4 Core (42 hours) Technology Competency² 0-3 CSCN 112 Programming in C++ Advanced⁵ 3 CSCN 215 Data Structures & Algorithms Using C++5 **CSCN 230** Critical Thinking (8 hours)¹ Business Data Communications & Networks⁵ Intr Bwvw/Contemp Moral Issues³ CSCN 326 Database Design & Management⁵ **RLGN 105** RSCH 201 Research 201 3 **CSCN 342** Computer Architecture⁵ Critical Thinking Elective CSCN 345 Linux Operating Systems⁵ CSCN 352 Windows System Administration⁵ CSCN 355 Civic & Global Engagement (5 hours)¹ Network Architecture, Protocols, & Theory5 EVAN 101 Evangelism & Christian Life³ CSCN 434 Program Language Design & Comp Theory⁵ Cultural Studies Elective CSCN 443 Operating Systems Design⁵ CSCN 461 Aspects of Computer Security - Defensive⁵ CSCN 471 Software Engineering Management^{5,6} Social & Scientific Inquiry (7 hours)¹ 3 Natural Science Elective CSCN 481 Computer Science Practicum I5,6 3 CSCN 482 3 Social Science Elective Computer Science Practicum II5,6 Christianity & Contexts (8 hours)¹ Cognate (12 hours) CSCN 321 Python & R for Data Science5 **BIBL 105** Old Testament Survey 3 CSCN 322 2 Data Engineering⁵ **BIBL 110** New Testament Survey 3 **THEO 201** Theology Survey I3 CSCN 323 Data Visualization⁵ CSCN 421 **THEO 202** Theology Survey II3 Applied Machine Learning or CSCN 422 Artificial Intelligence5 3 Quantitative Studies Courses (13 hours) MATH 128 Elem. Functions & Coordinate Geometry7 **MATH 211** Introduction to Statistical Analysis 3 **MATH 250** Introduction to Discrete Mathematics **MATH 350** Discrete Mathematics

Lab Sciences Courses (4 hours) Lab Science Elective⁸

Technical Elective Courses (3 hours)9

Notes

All applicable prerequisites must be met

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

²All students must pass the Computer Assessment OR complete applicable INFT course; refer to <u>www.liberty.edu/computerassessment</u> for more information.

³Students 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.

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

⁵Students 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.

⁶Course requires Department Chair approval for registration.

⁷Any 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). 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.

¹⁰Choose 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*

Revised: 03.08.2023

Graduation Requirements

120 Total Hours

2.0 Overall grade point average

30 Hours must be upper-level courses (300-400 level) of 'C' Minimum required for all courses in the maior

Grade of 'C' Minimum required for <u>all</u> courses in the major, quantitative studies, lab science, technical elective, and major foundational sections

- 25% Of major, core, and cognate taken through Liberty University
- 30 Hours must be completed through Liberty University

Grad App Submission of Degree Completion Application must be completed

within the last semester of a student's anticipated graduation date **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 ¹ [CSCN 111]	3
Information Literacy Elective ¹ [CSCN 110]	3	Math Elective ¹ [MATH 131]	4
Technology Competency ²	0-3	CSCN 230	3
MATH 128 ³	4	CSER	<u>0</u>
CSER	<u>0</u>	То	tal 16
Т	'otal 15-18		

SOPHOMORE YEAR					
BIBL 110	2	Social Science Elective ¹ [BUSI 240]	3		
Communications Elective ¹ [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 15		Total 15		

JUNIOR YEAR					
Natural Science Elective ¹ [PHYS 201]	4	CSCN 322	3		
CSCN 321	3	CSCN 323	3		
CSCN 342	3	CSCN 326	3		
CSCN 461	3	CSCN 471	3		
MATH 211	3	Lab Science Elective ⁴	4		
CSER	<u>0</u>	CSER	<u>0</u>		
	Total 16		Total 16		

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SENIOR YEAR					
THEO 201	2	THEO 202	2		
CSCN 421 or 422	3	Critical Thinking Elective ¹	3		
CSCN 434	3	Cultural Studies Elective ¹	3		
CSCN 443	3	CSCN 482	3		
CSCN 481	3	Technical Elective ⁵	3		
CSER	<u>0</u>	CSER	<u>0</u>		
	Total 14		Total 14		

Notes

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³Any 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)

⁴Choose 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. ⁵Choose 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.