LIBERTY UNIVERSITY

Bachelor of Science in Computer Science
Data Science Cognate
2024-2025 Degree Completion Plan

Important: This degree plan is effective for those starting this degree program in fall 2024 through summer 2025. 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 (42-45 hours)

Course		Hrs	Sem	Grade
Communication & Information Literacy (12 hours)[1]				
ENGL 101	Composition & Rhetoric	3		
_____	Communications Elective	3		
_____	Information Literacy Elective	3		
_____	Information Literacy Elective	3		
Technological Solutions & Quantitative Reasoning (5-8 hours)[1]				
UNIV 101	Foundational Skills	1		
MATH ____	Math Elective (MATH 114 or higher)	4		
_____	Technology Competency[2]	0-3		
Critical Thinking (5 hours)[1]				
RLGN 105	Intr Bwvw/Contemp Moral Issues[3]	2		
_____	Critical Thinking Elective	3		
Civic & Global Engagement (5 hours)[1]				
EVAN 101	Evangelism & Christian Life[3]	2		
_____	Cultural Studies Elective	3		
Social & Scientific Inquiry (7 hours)[1]				
_____	Natural Science Elective	4		
_____	Social Science Elective	3		
Christianity & Contexts (8 hours)[1]				
BIBL 105	Old Testament Survey	2		
BIBL 110	New Testament Survey	2		
THEO 201	Theology Survey I[3]	2		
THEO 202	Theology Survey II[3]	2		

Course		Hrs	Sem	Grade
Major Foundational Courses (0-20 hours)				
BUSI 240	Organizational Behavior & Management[4]	3		
CSCN 110	Introduction to Computer Sciences[4]	3		
CSCN 111	Programming in C++ Beginner[4]	3		
ENGR 270	Technical Communication[4]	3		
MATH 131	Calculus & Analytical Geometry I[4]	4		
PHYS 201	General Physics I[4]	4		
MAJOR				
	Core (42 hours)			
CSCN 112	Programming in C++ Advanced[5]	3		
CSCN 215	Data Structures & Algorithms Using C++[5]	3		
CSCN 230	Business Data Communications & Networks[5]	3		
CSCN 326	Database Design & Management[5]	3		
CSCN 340	Information Security Concepts & Principles[5]	3		
CSCN 342	Computer Architecture[5]	3		
CSCN 345	Linux Operating Systems[5]	3		
CSCN 352	Windows System Administration[5]	3		
CSCN 355	Network Architecture, Protocols, & Theory[5]	3		
CSCN 434	Program Language Design & Comp Theory[5]	3		
CSCN 443	Operating Systems Design[5]	3		
CSCN 471	Software Engineering Management[5,6]	3		
CSCN 481	Computer Science Practicum I[5,6]	3		
CSCN 482	Computer Science Practicum II[5,6]	3		
	Cognate (12 hours)			
CSCN 321	Python & R for Data Science[5]	3		
CSCN 322	Data Engineering[5]	3		
CSCN 323	Data Visualization[5]	3		
CSCN 421	Applied Machine Learning			
or CSCN 422	Artificial Intelligence[5]	3		
	Quantitative Studies Courses (13 hours)			
MATH 128	Precalculus with Trigonometry[7]	4		
MATH 211	Introduction to Statistical Analysis	3		
MATH 250	Introduction to Discrete Mathematics	3		
MATH 350	Discrete Mathematics	3		
	Lab Sciences Courses (4 hours)			
_____	Lab Science Elective[8]	4		
	Technical Elective Courses (7 hours)[9]			
_____	_____			
_____	_____			

Notes
All applicable prerequisites must be met

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

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

[3] 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.

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

[5] 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.

[6] Course requires Department Chair approval for registration.

[7] 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).

[8] 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.

[9] 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

Graduation Requirements
- **120** Total Hours
- **2.0** Overall grade point average
- **30** Hours must be upper-level courses (300-400 level)
- **Grade of 'C'** Minimum required for **all** 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

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SUGGESTED COURSE SEQUENCE

FRESHMAN YEAR

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First Semester		Second Semester	
ENGL 101	3	BIBL 105	2
EVAN 101	2	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	Communications Elective[1] [ENGR 270]	3
CSER	0	CSER	0
Total	14-17	Total	16

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SOPHOMORE YEAR

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BIBL 110	2	Social Science Elective[1] [BUSI 240]	3
THEO 201	2	CSCN 215	3
CSCN 112	3	CSCN 352	3
CSCN 345	3	CSCN 355	3
MATH 250	3	MATH 350	3
CSER	0	CSER	0
Total	13	Total	15

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JUNIOR YEAR

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Natural Science Elective[1] [PHYS 201]	4	CSCN 322	3
CSCN 321	3	CSCN 323	3
CSCN 340	3	CSCN 326	3
CSCN 342	3	CSCN 471	3
MATH 211	3	Lab Science Elective[4]	4
CSER	0	CSER	0
Total	16	Total	16

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SENIOR YEAR

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CSCN 421 or 422	3	THEO 202	2
CSCN 434	3	Critical Thinking Elective[1]	3
CSCN 443	3	Cultural Studies Elective[1]	3
CSCN 481	3	CSCN 482	3
Technical Elective[5]	4	Technical Elective[5]	3
CSER	0	CSER	0
Total	16	Total	14

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[5]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.