LIBERTY UNIVERSITY

# Bachelor of Science in Computer Science

*Cybersecurity 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] | 3 | | |
| CSCN 485 | Cybersecurity Practicum I[5] | 3 | | |
| CSCN 486 | Cybersecurity Practicum II[5] | 3 | | |
| | Cognate (12 hours) | | | |
| CSCN 461 | Aspects of Computer Security - Defensive[5] | 3 | | |
| CSCN 462 | Adv Aspects of Comp Sec - Ethical Hacking[5] | 3 | | |
| CSCN 463 | Modern Cryptography[5] | 3 | | |
| CSCN ____ | CSCN Programming Language Elective[5,6] | 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 are on a case-by-case basis and require ABET coordinator review and Department Chair approval.

[6]Choose one of the following Programming Language courses: CSCN (or CSIS) 209, 212, 244, 312, 315, 316, or 354, or BMIT 212. Other languages may be approved by the department chair.

[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 |

## SUGGESTED COURSE SEQUENCE

### FRESHMAN YEAR

| 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 |

### SOPHOMORE YEAR

| | | | |
|---|---|---|---|
| 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 |

### JUNIOR YEAR

| | | | |
|---|---|---|---|
| Natural Science Elective[1] [PHYS 201] | 4 | CSCN 326 | 3 |
| CSCN 342 | 3 | CSCN 340 | 3 |
| CSCN 461 | 3 | CSCN 471 | 3 |
| CSCN 463 | 3 | Computer Science Programming Elective[4] | 3 |
| MATH 211 | 3 | Lab Science Elective[5] | 4 |
| CSER | 0 | CSER | 0 |
| Total | 16 | Total | 16 |

### SENIOR YEAR

| | | | |
|---|---|---|---|
| CSCN 434 | 3 | THEO 202 | 2 |
| CSCN 443 | 3 | Critical Thinking Elective[1] | 3 |
| CSCN 462 | 3 | Cultural Studies Elective[1] | 3 |
| CSCN 485 | 3 | CSCN 486 | 3 |
| Technical Elective[6] | 4 | Technical Elective[6] | 3 |
| CSER | 0 | CSER | 0 |
| Total | 16 | Total | 14 |

**Notes**

[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]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)

[4]Choose one of the following Programming Language courses: CSCN (or CSIS) 209, 212, 244, 312, 315, 316, or 354, or BMIT 212. Other languages may be approved by the department chair. CSCN 354 is strongly recommended for the Cybersecurity Cognate.

[5]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.

[6]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.