

## THE COMPUTER SCIENCE MAJOR (BA)

Associate Professor: David Sonnier

Computer Science is a rapidly changing and exciting field. Its impact on our lives is evidenced by the variety of uses of information technology in business, industry, entertainment, science, and government, to name a few. The Computer Science Major focuses on the foundations of the computer sciences including areas such as software and hardware design, mathematical foundations of computer science, and complexity of computation. The program is designed to give students an enduring foundation for future professional growth. The program blends theory and practice into a learning experience that gives students the capability to apply computer and information systems technology to a wide range of disciplines.

### NOTE

\* MTH 115 and MTH 210 may also be used to satisfy core requirements.

**NOTE: To graduate with a Bachelor of Arts or Bachelor of Science degree from Lyon College, students must successfully complete a minimum of 120 semester credit hours comprised of our required Core curriculum (44-48 hours), the requirements of at least one major (credit hours vary per major), and a selection of our Liberal Arts electives. They must also earn at least a 2.00 cumulative grade point average for all work taken at Lyon College and a 2.00 cumulative grade point average in their major, minor, and concentration.**

Program: Computer Science

## SUMMARY OF REQUIREMENTS FOR A MAJOR IN COMPUTER SCIENCE

Item #	Title	Credits
	MTH 115 or MTH 290	3
MTH 210	Calculus I	4
CSC 100	Introduction to Programming in C++	3
CSC 240	Data Structures with C++	3
CSC 245	Introduction to Digital Logic	3
CSC 255	Computer Architecture	3
CSC 265	Algorithms	3
CSC 310	Mathematical Foundations of Computer Science	3
CSC 320	Programming Languages	3
CSC 420	Operating Systems	3
	CSC Electives (9 credits)	9
	Sub-Total Credits	40

## CORE CURRICULUM

Item #	Title	Credits
	Core Curriculum Requirements	44 - 48

Sub-Total Credits	44-48
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<b>Total credits:</b>	<b>84-88</b>
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## CATEGORY DESCRIPTIONS

### MTH 115 or MTH 290

Item #	Title	Credits
MTH 115	Discrete Mathematics	3
MTH 290	Foundations of Modern Mathematics	3

### CSC Electives (9 credits)

3 electives at the 300/400 level; one may be a 300/400 level MTH class.

### Core Curriculum Requirements

#### Developmental requirements (up to 6 credits):

Taken in the first semester, if placed into it:

- ENG 001 College English

Taken in the first year, if placed into it:

- MTH 001 Intermediate Algebra

#### Proficiency requirements (15 credits):

Taken in the first two years, if not placed out of it:

- MTH 101 College Algebra or
- MTH 103 College Algebra w/Lab or
- MTH 105 Mathematics for Liberal Arts

Taken in the first year (depending on placement):

- ENG 101 English Composition I (taken immediately if placed into it or immediately following completion of ENG 001 with a grade of 'C' or better)
- ENG 102 English Composition II (taken immediately following successful completion of ENG 101 with a grade of 'C' or better)

Recommended but not required in the first year:

- First-year of a foreign language

## Common Core requirements (13-14 credits):

Taken in the first year (or within one year of completing any pre-requisite coursework):

- COR 100 Year One
- COR 101 Year One OH ONE

Taken anytime in the first TWO years:

- ENG 105 World Literature
- POL 105 The American Experience

Taken anytime prior to graduation:

- HIS 110 World Civilization
- HIS 112 World Civilization II

## Distribution requirements:

One fine arts course (3 credits)

Select from the following:

- ART 101 Introduction to Visual Arts
- ART 201, 202 World Art I and II
- MUS 105 Language of Music
- MUS 110 Music Theory
- THE 101 Introduction to Theatre

One social science course (3 credits)

Select from the following:

- ANT 101 Introduction to Cultural Anthropology
- ECO 101 Principles of Economics I
- PSY 101 Introduction to Psychology

One mathematics course (3-4 credits)

Select from the following:

- MTH 105 Mathematics for Liberal Arts
- MTH 110 Elementary Functions
- MTH 115 Discrete Mathematics or MTH 290 Foundations of Modern Mathematics
- ECO 208 Quantitative Methods in Business, Economics, and Decision Science

- MTH 210 Calculus I
- BUS 323 Statistical Applications to Business Decision Making
- PSY 235 Statistics for the Behavioral Sciences

## One lab science course (4 credits)

Select from the following:

- BIO 100, 100L Biology in Context
- BIO 110, 110L Principles of Biology I
- CHM 105, 105L Introduction to Chemistry
- CHM 110, 110L General Chemistry I
- PHY 210, 211 General Physics
- PHY 240, 241 Fundamentals of Physics
- SCI 100, 100L Physical Science for Liberal Arts

## One religion/philosophy course (3 credits)

Select from the following:

- RPH 110 Old Testament
- RPH 120 New Testament
- RPH 130 Introduction to Christian Theology
- RPH 140 Introduction to World Philosophies
- RPH 150 World Religions
- RPH 205 Introduction to Ethics

## Two physical education courses (0-2 credits)

Select from the following:

- PED courses with designations from 101 to 130
- OLP courses with designations from 120 to 130

**NOTE:** Only one activity (specified PED/OLP) course can be taken per semester. Additionally, only seven activity credits can be counted toward the graduation requirement.