

FRESHMAN

FALL	SPRING
BTGE 1725 3 <i>The Bible and the Gospel</i> W	BTGE 2730 3 <i>Old Testament Literature</i> W X
CS 1210 3 <i>Intro to Programming Using C++</i> A	CS 1220 3 <i>Object-Oriented Design Using C++</i> A D
EGCP 1010 3 <i>Digital Logic Design</i> B	CY 1000 3 <i>Introduction to Cybersecurity</i> E
ENG 1400 3 <i>Composition</i>	MATH 1715 4 <i>Calculus II</i> C F
MATH 1705 4 <i>Calculus I</i> C	PHYS 2110 4 <i>General Physics I</i> F
16 17	

SOPHOMORE

FALL	SPRING
BTGE 2740 3 <i>New Testament Literature</i> X Y	COM 1100 3 <i>Fundamentals of Speech</i>
CS 2210 3 <i>Data Structures Using Java</i> D G	CS 3310 3 <i>Operating Systems</i> D H
CS 3210 3 <i>Programming Language Survey</i> D	EGCP 3210 3 <i>Computer Architecture</i> A B
CY 3420 3 <i>Cyber Defense</i> D E	Math Elective 3
Required Cognate Elective 4	MATH 2520 3 <i>Discrete Math & Probability Princip for CS</i> F J
	PEF 1990 2 <i>Physical Activity and Healthy Living</i>
16 17	

JUNIOR

FALL	SPRING
BTGE 3755 3 <i>Theology I</i> Y Z	BTGE 3765 3 <i>Theology II</i> Z
CS Technical Elective 3	CS Technical Elective 3
CS 3410 3 <i>Algorithms</i> G J K	CS 3220 3 <i>Web Applications</i> G L
EGCP 4310 3 <i>Computer Networks</i> G H	CS 3610 3 <i>Database Organization and Design</i> G J M
GBIO 1000 3.5 <i>Principles of Biology</i>	GSS 1100 3 <i>Politics and American Culture</i>
15.5 15	

SENIOR

FALL	SPRING
CS Technical Elective 3	CS 3510 3 <i>Compiler Theory and Practice</i> G
CS 4810 3 <i>Software Engineering I</i> L M K N	CS 4820 4 <i>Software Engineering II</i> N
EGGN 4010 0 <i>Senior Seminar</i>	EGGN 3110 3 <i>Professional Ethics</i>
HIST 3 <i>History Elective</i>	Electives 3.5
LIT 2XXX 3 <i>Literature Elective</i>	HUM 1400 3 <i>Introduction to Humanities</i>
Social Science Elective 3	
15 16.5	

Program accredited by:



Computing Accreditation Commission

GUIDE KEY

Left Side Required prerequisite ID	Middle Required corequisite ID	Right Side This course prerequisite ID
A is a prerequisite for A		Credit hours 3

ENGR & COMP SCI
MATH & SCIENCE
GENERAL EDUCATION

TOTAL PROGRAM HOURS:
128

Program, track, and elective information on reverse side

Computer Science Program Information

WHAT IS COMPUTER SCIENCE?

Computer science focuses on designing and developing software systems, the digital environment in which people work and communicate. As a broad field, it spans everything from building applications and websites to developing algorithms, managing data, and engineering reliable systems that run at scale. Its importance grows as AI tools make coding easier, since it emphasizes clear problem definition and sound design so software is correct, secure, maintainable, and reliable in real use.

WHAT KINDS OF JOBS CAN I GET WITH A COMPUTER SCIENCE DEGREE?

Computer science graduates work in roles that build and operate software systems across many industries. Common paths include software engineering (applications, web, mobile, backend services), data engineering and analytics, cloud/DevOps and systems roles that deploy and scale reliable platforms, and machine learning engineering. Cedarville's hands-on lab experiences, internships, and programming competitions provide practical opportunities that align with common employer expectations in software engineering, application development, and algorithmic problem solving.

WHY CHOOSE CEDARVILLE?

The School of Engineering and Computer Science education at Cedarville is based on three pillars, aimed at helping students:

1. *Discover their purpose*
2. *Know their people*
3. *Prepare to change their world*

Addressing these topics from a biblical perspective is critical for developing not only an understanding of their pursuit of their career, but also their life-long roles as followers of Jesus Christ!

Computer Science Program Tracks

Students in the computer science program at Cedarville University have the option of fulfilling their 9 hours of Computer Science Technical Electives (along with up to 3 additional elective hours) by completing one of the following tracks:

CYBER OPERATIONS

- »CY-3320 Linux Systems Programming (3 hrs)
 - »CY-4310 Cyber Operations (3)
 - »CY-4330 Software Security (3)
- 9 hours total*

GRAPHIC DESIGN

- »Any 3XXX- or 4XXX-level CS course (3 hrs)
 - »VCD-1050 Applied Design: Tech Tools I (3)
 - »VCD-2200 Typography (3)
 - »VCD-2400 Graphic Design I (3)
- 12 hours total*

ARTIFICIAL INTELLIGENCE

- »CS-4430 Machine Learning for Intelligent Agents (3 hrs)
 - »DSAI-2110 Data Management for AI (3)
 - »DSAI-3110 Foundations of Data Science & Machine Learning (3)
 - »DSAI-3510 Neural Networks and Deep Learning (3)
- 12 hours total*

LINGUISTICS

- »LING-2070 Introduction to Linguistics (2 hrs)
 - »LING-3080 Linguistics for Language Learning (3)
 - »LING-3XXX Elective (3)
 - »One of:
 - DSAI-3110 Foundations of Data Science and Machine Learning (3)
 - MATH-3560 Discrete Math: Combinatorics (3)
- 11 hours total*

HARDWARE

- »EGCP-2120 Microcontrollers (3 hrs)
 - »EGCP-3010 Advanced Digital Logic Design (3)
 - »EGCP-4210 Advanced Computer Architecture (3)
- 9 hours total*

VIDEO GAME ENGINEERING

- »CS-4430 Machine Learning for Intelligent Agents (3 hrs)
 - »CS-4710 Computer Graphics (3)
 - »CS-4730 Virtual Reality Applications (3)
- 9 hours total*

(Students in Artificial Intelligence and Video Game Engineering Tracks encouraged to take MATH-3610 Linear Algebra as math elective.)

Computer Science Program Electives

REQUIRED COGNATE ELECTIVE

- »BIO-1115 Biology I: Cell Biology (4)
 - »PHYS-2120 General Physics II (4)
- (PHYS-2120 required for Computer Science & Cyber Operations double major)*

MATH ELECTIVE

- »Any 2XXX, 3XXX, or 4XXX MATH course

COMPUTER SCIENCE TECHNICAL ELECTIVES

- »Any 3XXX- or 4XXX-level computer science or cyber operations course
- »EGCP-3010 Advanced Digital Logic Design (3)
- »EGCP-4210 Advanced Computer Architecture (3)
- »MATH-3500 Number Theory (3)
- »MATH-3560 Discrete Math: Combinatorics (3)
- »MATH-3610 Linear Algebra (3)
- »MATH-3760 Numerical Analysis (3)

Computer Science Critical Path

The below sequence of courses is most critical for students' timely completion of the program due to prerequisites.

