

FRESHMAN		SOPHOMORE		JUNIOR		SENIOR	
FALL	SPRING	FALL	SPRING	FALL	SPRING	FALL	SPRING
BTGE 1725 3 The Bible and the Gospel [a]	BTGE 2730 3 Old Testament Literature [a] [b]	BTGE 2740 3 New Testament Literature [b] [c]	COM 1100 3 Fundamentals of Speech	BTGE 3755 3 Theology I [c] [d]	BTGE 3765 3 Theology II [d]	CS Technical Elective 3	CS 3510 3 Compiler Theory and Practice [g]
CS 1210 3 Intro to Programming Using C++ [A]	CS 1220 3 Object-Oriented Design Using C++ [A] [D]	CS 2210 3 Data Structures Using Java [D] [G]	CS 3310 3 Operating Systems [D] [H]	CS Technical Elective 3	CS Technical Elective 3	CS 4810 3 Software Engineering I [L] [M] [K] [N]	CS 4820 4 Software Engineering II [N]
EGCP 1010 3 Digital Logic Design [B]	CY 1000 3 Introduction to Cybersecurity [E]	CS 3210 3 Programming Language Survey [D]	EGCP 3210 3 Computer Architecture [A] [B]	CS 3410 3 Algorithms [G] [J] [K]	CS 3220 3 Web Applications [G] [L]	EGGN 4010 0 Senior Seminar	EGGN 3110 3 Professional Ethics
EGGN 1910 1 Engr, Comp, & Christian Vocation	MATH 1715 4 Calculus II [C] [F]	CY 3420 3 Cyber Defense [D] [E]	Math Elective 3	EGCP 4310 3 Computer Networks [G] [H]	CS 3610 3 Database Organization and Design [G] [J] [M]	HIST 3 History Elective	Electives 2.5
ENG 1400 3 Composition	PHYS 2110 4 General Physics I [F]	Required Cognate Elective 4	MATH 2520 3 Discrete Math & Probability Princip for CS [F] [J]	GBIO 1000 3.5 Principles of Biology	GSS 1100 3 Politics and American Culture	LIT 2XXX 3 Literature Elective	HUM 1400 3 Introduction to Humanities
MATH 1705 4 Calculus I [C]			PEF 1990 2 Physical Activity and Healthy Living			Social Science Elective 3	
17	17	16	17	15.5	15	15	15.5

Program accredited by:



Computing Accreditation Commission

GUIDE KEY	Left Side	Middle	Right Side	
	Required prerequisite ID	Required corequisite ID	This course prerequisite ID	ENGR & COMP SCI
				MATH & SCIENCE
				GENERAL EDUCATION

[A] is a prerequisite for **[A]**

Credit hours **3**

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
- »MATH-3610 Linear Algebra (3) required as math elective

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
- »MATH-3610 Linear Algebra (3) encouraged 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.

