

FRESHMAN		SOPHOMORE		JUNIOR		SENIOR	
FALL	SPRING	FALL	SPRING	FALL	SPRING	FALL	SPRING
BTGE 1725 3 The Bible and the Gospel [a]	CS 1210 3 Intro to Programming Using C++ [c]	BTGE 2730 3 Old Testament Literature [a] [b]	CHEM 1050 3.5 Chemistry for Engineers	BTGE 2740 3 New Testament Literature [b] [c]	EGEE 3220 3 Electronics II [M] [N]	BTGE 3755 3 Theology I [c] [d]	BTGE 3765 3 Theology II [d]
EGCP 1010 3 Digital Logic Design [A]	EGEE 1920 1 Intro to Elect & Comp Engineering [A] [C] [D]	CS 1220 3 Object-Oriented Design Using C++ [C]	COM 1100 3 Fundamentals of Speech	EGCP 2120 3 Micro-controllers [A] [C] [K]	EGEE 3330 3 Communication Systems [L]	EGEE 4410 3 Feedback Control Systems [L]	EGEE 4820 3 Electrical Engr Senior Design II [O]
EGGN 1910 1 Engr, Comp, & Christian Vocation	EGME 1810 1 Engineering Graphics	EGGN 2510 3 Statics [B] [D]	EGEE 2010 4 Circuits [G] [H] [J]	EGEE 3110 3 Linear Systems [J] [L]	EGGN 3110 3 Professional Ethics	EGEE 4810 4 Electrical Engr Senior Design I [K] [L] [N] [O]	HIST 3 History Elective
ENG 1400 3 Composition	GBIO 1000 3.5 Principles of Biology	MATH 2740 3 Differential Equations [E] [G]	EGEE 2110 3 Engineering Analysis [C] [G]	EGEE 3210 3 Electronics I [J] [M]	LIT 2XXX 3 Literature Elective	EGGN 4010 0 Senior Seminar	HUM 1400 3 Introduction to Humanities
GSS 1100 3 Politics and American Culture	MATH 1715 4 Calculus II [B] [E]	PHYS 2120 4 General Physics II [F] [H]	MATH 2705 3 Calculus IIIA [E]	PEF 1990 2 Physical Activity and Healthy Living	3 Social Science Elective	3 Technical Elective / Concentration	3 Technical Elective / Concentration
MATH 1705 4 Calculus I [B]	PHYS 2110 4 General Physics I [E] [F]			3 Technical Elective / Concentration	3 Technical Elective / Concentration	3 Technical Elective / Concentration	
17	16.5	16	16.5	17	18	16	15

Program accredited by:



Engineering Accreditation Commission

GUIDE KEY	Left Side	Middle	Right Side	
	Required prerequisite ID	Required corequisite ID	This course prerequisite ID	ENGR & COMP SCI
	A is a prerequisite for A		Credit hours 3	MATH & SCIENCE
				GENERAL EDUCATION

TOTAL PROGRAM HOURS:

132

Program, concentration, and elective information on reverse side

Electrical Engineering Program Information

WHAT IS ELECTRICAL ENGINEERING?

Electrical engineering focuses on designing, building, and testing systems that use electricity, electronics, and electromagnetism. From the power grid that powers our daily life to microchips, sensors, and communications networks that keep people connected, electrical engineers leverage electrical theory to create reliable technology that powers modern life.

WHAT KINDS OF JOBS CAN I GET WITH AN ELECTRICAL ENGINEERING DEGREE?

Electrical engineers are in high demand and have opportunities to work in fields like power and energy, electronics and semiconductors, telecommunications, and robotics. Many electrical engineers work for aerospace, automotive, medical device, renewable energy, and tech companies.

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!

Electrical Engineering Program Concentrations

Students in the electrical engineering program at Cedarville University have the option to complete one of the below concentrations in place of their 15 hours of Technical Electives.

DATA SCIENCE / ARTIFICIAL INTELLIGENCE

- » DSAI-2110 Data Management for AI (3 hrs)
- » DSAI-3110 Foundations of Data Science & Machine Learning (3)
- » DSAI-3510 Neural Networks and Deep Learning (3)
- » EGEE-4110 Digital Signal Processing or EGEE-4120 Digital Image Processing (3)
- » MATH-2520 Discrete Math and Probability Principles for CS (3)

DIGITAL SYSTEMS

- » CS-2210 Data Structures Using Java (3 hrs)
- » EGCP-3010 Advanced Digital Logic Design (3)
- » EGCP-3210 Computer Architecture (3)
- » EGCP-4250 CMOS VLSI Design (3)
- » Any 4XXX-Level EGCP or EGEE course (3)

POWER AND ENERGY

- » EGEE-3310 Electromagnetics (3 hrs)
- » EGEE-3510 Power Electronics (3)
- » EGEE-3530 Electrical Machines (3)
- » EGEE-4510 Power Systems (3)
- » MATH-2715 Calculus IIIB (3)

SIGNAL / IMAGE PROCESSING

- » EGEE-3370 Probability and Random Processes for Engineers (3 hrs)
- » EGEE-4110 Digital Signal Processing (3)
- » EGEE-4120 Digital Image Processing (3)
- » EGEE-4610 Medical Imaging (3)
- » Any 3XXX-Level Math Course (3)

Electrical Engineering Program Electives

TECHNICAL ELECTIVES MUST INCLUDE THE FOLLOWING:

- » Any 3XXX- or 4XXX-Level EGCE, EGCP, EGEE, EGGN, or EGME Course, or CY-1000, or CS-2210, or DSAI-3110, or PHYS-2130 (3 hrs)
- » Any 3XXX- or 4XXX-Level EGCE, EGCP, EGEE, EGGN, EGME, CS, or CY course, or MATH-2520, or MATH-2715 (3)
- » Any 3XXX- or 4XXX-Level EGCE, EGCP, EGEE, EGGN, EGME, CS, or CY course, or DSAI-3510, or any 3XXX-Level MATH or PHYS course (3)
- » Any two 4XXX-Level EGCE, EGCP, EGEE, EGGN, EGME, CS, or CY courses (6)

Electrical Engineering Critical Path

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

