

FRESHMAN		SOPHOMORE		JUNIOR		SENIOR	
FALL	SPRING	FALL	SPRING	FALL	SPRING	FALL	SPRING
BTGE 1725 3 The Bible and the Gospel [a]	3.5 Biology Elective	BTGE 2730 3 Old Testament Literature [a]	COM 1100 3 Fundamentals of Speech [b]	BTGE 2740 3 New Testament Literature [b]	EGME 3020 2 Mechanical Engineering Lab II [S][T][U][W][V]	BTGE 3755 3 Theology I [c]	BTGE 3765 3 Theology II [d]
CHEM 1050 3.5 Chemistry for Engineers [A]	EGGN 2510 3 Statics [D][F][E] OR	EGGN 2520 3 Mechanics of Materials [E][G][J]	EGEE 2050 4 Circuits and Instrumentation [L][M][N]	EGME 2430 3 Contemporary Manufacturing Processes [O][R]	EGME 3150 3 Heat Transfer [K][T][U][W]	EGME 4660 3 Automatic Controls [N]	ECON 2110 3 Essentials of Economics
EGGN 1910 1 Engr. Comp. & Christian Vocation [B]	EGME 1920 1 Intro to Mechanical Engineering [B][C][F]	EGME 2050 4 Computational Methods [L][K]	EGME 2410 4 Properties of Engineering Materials [J][O]	EGME 3010 2 Mechanical Engineering Lab I [J][N][P][S]	EGME 3850 3 Mechanical Design [J][O][X]	EGME 4810 3 ME Senior Design I [V][W][X][R][Y]	EGGN 3110 3 Professional Ethics OR
EGME 1810 1 Engineering Graphics [C] OR	MATH 1715 4 Calculus II [D][G]	MATH 2740 3 Differential Equations [G][L]	EGME 2630 3 Dynamics [E][L][P] OR	EGME 3105 3 Thermodynamics I [A][Q][T]	EGXX 3 Concentration or Elective	EGXX 3 Concentration or Elective	EGME 4820 3 ME Senior Design II [Y]
ENG 1400 3 Composition	PHYS 2110 4 General Physics I [G][H]	PHYS 2120 4 General Physics II [H][M]	MATH 2705 3 Calculus IIIA [G][Q]	EGME 3210 3 Fluid Mechanics [L][Q][U]	HIST 3 History Elective	EGXX 3 Concentration or Elective	EGXX 3 Concentration or Elective
MATH 1705 4 Calculus I [D]				GSS 1100 3 Politics and American Culture	LIT 2XXX 3 Literature Elective	PEF 1990 2 Physical Activity and Healthy Living	HUM 1400 3 Introduction to Humanities
15.5	15.5	17	17	17	17	17	18

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]			MATH & SCIENCE
		Credit hours 3			GENERAL EDUCATION

TOTAL PROGRAM HOURS:

134

Program, concentration, and elective information on reverse side

Mechanical Engineering Program Information

WHAT IS MECHANICAL ENGINEERING?

Mechanical engineering focuses on the design, analysis, manufacturing, and sustainment of mechanical and thermal fluid systems—the machines, devices, and technologies that convert energy into useful work. As a broad engineering discipline, it includes activities ranging from developing engines, HVAC systems, and power plants to robotics, medical devices, and aerospace technologies. Ultimately, mechanical engineers apply principles of physics, materials science, and mathematics to address practical challenges, improving the efficiency, safety, and reliability of technologies that shape modern society.

WHAT KINDS OF JOBS CAN I GET WITH A MECHANICAL ENGINEERING DEGREE?

Mechanical engineers have a wide range of career opportunities and are employed across many industries for both their discipline-specific knowledge and ability to solve technical problems in teams. They work in fields such as automotive, aerospace, energy, manufacturing, robotics, transportation, HVAC, and biomedical engineering. Graduates may find careers in product design, systems analysis, testing, research and development, or project management. Mechanical engineers are employed by private companies, government agencies, and research organizations, and some choose to continue their education through graduate study. Professional licensure and industry certifications can further expand career and advancement opportunities.

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!

Mechanical Engineering Program Concentrations

Students in the mechanical engineering program at Cedarville University declare and complete one of three concentration options:

AEROSPACE ENGINEERING

ME Concentration Electives (9 hrs; 3 hrs each)

- »EGME-4050 Finite Element Analysis OR EGME-4060 Computational Fluid Dynamics
- »EGME-4210 Aerodynamics
- »EGME-4250 Aerospace Propulsion

Approved Engineering Electives (3 hrs)

»See below

BIOMEDICAL ENGINEERING

ME Concentration Electives (9 hrs; 3 hrs each)

- »EGGN-3610 Biomedical Engineering Systems
- »EGME-4050 Finite Element Analysis OR EGME-4060 Computational Fluid Dynamics
- »EGME-4560 Biomechanics and Biomaterials

Approved Engineering Electives (3 hrs)

»See below

GENERAL MECHANICAL ENGINEERING

ME Concentration Electives (6 hrs; 3 hrs each)

- »EGME-3115 Thermodynamics II
- »EGME-3610 Kinematics and Design of Machines

Approved Engineering Electives (6 hrs)

»Any EGXX course at 3000 or higher level with at least one at a 4000 level

Mechanical Engineering Program Electives

AEROSPACE ENGINEERING ELECTIVES

- »EGME-3115 Thermodynamics II
- »EGME-3130 Internal Combustion Engines
- »EGME-3450 Plastics and Composites
- »EGME-3610 Kinematics & Design of Machines
- »EGME-4270 Compressible Fluid Flow
- »EGME-4530 Adv Mechanics of Materials
- »EGME-4710 Vibrations

(3 hrs each)

BIOMEDICAL ENGINEERING ELECTIVES

- »EGEE-4110 Digital Signal Processing
- »EGEE-4120 Digital Image Processing
- »EGGN-3510 Systems Optimization
- »EGME-3450 Plastics and Composites
- »EGME-3610 Kinematics & Design of Machines
- »EGME-4410 Intro to Fracture Mechanics
- »EGME-4530 Adv Mechanics of Materials
- »EGME-4610 Dynamics of Machines
- »EGME-4710 Vibrations
- »EGME-4950 Adv Dynamics
- »EGME-4950 Continuum Mechanics
- »PHYS-4880 Biological Physics

(3 hrs each)

BIOLOGY ELECTIVE

- »Any BIO-XXXX or GBIO-XXXX course

(3 hrs)

Mechanical Engineering Critical Path

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

