

BS Mechanical Engineering

12 credits in the major and 9 credits in the minor must be completed at Alvernia University

When pursuing a double major, you must have 12 distinct credits between the two majors.

Semester 1	Credits	Semester 2	Credits
Diversity graduation requirement cannot be fulfilled through major courses; students should fulfill this with a Gen Ed SEARCH class			
Writing Enhanced graduation requirement cannot be fulfilled through major courses; students should fulfill this with a Gen Ed SEARCH class			
SRH 101: Search Seminar or HNR 160: Honors	3	PHY 201: Physics II with Lab	4
EGR 107: Engineering Lab Safety	1	MAT 231: Calculus II	4
MAT 230: Calculus I	4	EGR 110: Engineering Design I	1
PHY 200: Physics I with Lab	4	THR 244: Computer-Assisted Design	3
CS 115: Intro to Object-Oriented Prog.	<u>3</u>	Gen Ed	<u>3</u>
TOTAL	15	TOTAL	15
Complete 5 hours of Community Service		Complete 5 hours of Community Service	
Semester 3	Credits	Semester 4	Credits
EE 200: Circuits I w/Lab	4	MAT 322: Differential Equations	3
CHE 104: General Chemistry 1	3	EGR 210: Engineering Design II	1
CHE 110: General Chemistry 1 Lab	1	ME 201: Strength of Materials	3
MAT 332: Vector Calculus	4	ME 211: Thermodynamics	3
EGR 201: Statics	3	THE 105 or PHI 105	3
THE 105 or PHI 105	<u>3</u>	ME 202: Dynamics	<u>3</u>
TOTAL	18	TOTAL	16
Complete 5 hours of Community Service		Complete 5 hours of Community Service	
Semester 5	Credits	Semester 6	Credits
EGR 206: Mechatronics	3	ME 341: Machine Design w/Lab	4
ME 310: Fluid Mechanics w/Lab	4	ME 331: Heat Transfer w/Lab	4
PHY 304: Modern Physics w/Lab	4	EGR 311: Internship/Research	3
MAT 345: Applied Probability & Linear Methods	4	Gen Ed: PHI 208	3
Gen Ed	<u>3</u>	Gen Ed	<u>3</u>
TOTAL	18	TOTAL	17
Complete 5 hours of Community Service		Complete 5 hours of Community Service	
Semester 7	Credits	Semester 8	Credits
ME 402: Finite Element Methods & Analysis	3	ME 421: Vibrations w/Lab	4
ME 410: Robotics	3	EGR: 481: Capstone Design II	2
EGR 480: Capstone Design I	2	Major Elective	3
Gen Ed	3	Major Elective	3
Gen Ed	3	Gen Ed	<u>3</u>
Gen Ed	<u>3</u>		
TOTAL	17	TOTAL	15
Complete 5 hours of Community Service		Complete 5 hours of Community Service	

Academic Policy on Eligibility for Participation of May Commencement Ceremony

The academic policy, which the Registrar follows, is: A student who has 6 or less credits remaining to complete the degree may participate in the May Commencement Ceremony. The Graduation Application is available online in myAlvernia on the 'Academics' tab. Seniors must submit the Graduation Application to the Registrar's Office as follows: October 1 for May Graduation; December 1 for August graduation; and March 1 for December graduation.

If you have any questions, please call the Registrar's Office (610.796.8201)

Curriculum Sheets, EAB Navigate, and AUAdvise

The information on this page and the Curriculum Sheet is provided in AUAdvise - EAB Navigate as a static tool for discussion purposes when meeting with students to schedule courses. [Degree Audit uAchieve](#) remains the official source for each student's curriculum audit. Degree Audit uAchieve must be used together with the Curriculum Sheet to determine whether the information noted during scheduling meetings on the curriculum sheet remains accurate.

General Notes

- A minimum of 123 credits are required for graduation.
- Where appropriate, courses required for the major can be used to satisfy General Education requirements. However, the credits earned for these courses are applied to either Gen Ed requirements or the major, not both.
- Paths of Knowledge coursework may count towards major or minor requirements, but may not fulfill a second Mid-Level Liberal Arts Exploration requirement.
- Students are expected to follow the catalog requirements for General Education, the major, and additional requirements.
- A minor or second major within the areas listed under Paths of Knowledge automatically fulfills that area of the Gen Ed requirements.
- Students must complete 45 of their last 60 credits at Alvernia University
- Students must complete community service hours as part of the General Education Program

Major Notes

The Engineering majors (electrical, mechanical, and industrial) are fundamentally sound in math and science and application ready (i.e., ready and able to apply their knowledge to solve cutting-edge issues). This is accomplished by extensive fundamental math and science training and hands-on training in cutting-edge industry and labs. The key features of the engineering majors include a common core engineering curriculum that allows exposure to all disciplines before selecting a major, four semesters of interdisciplinary design courses, and co-op or internship experience in an advanced industry or faculty applied research lab inclusive of professional mentoring.

Degree/Major: BS ENGINEERING

Name: _____ Id: _____

2nd Major: _____ 3rd Major: _____ Minor: _____ 2nd Minor: _____

Matriculation Year 2023-2024 - Term: _____

GENERAL EDUCATION

Grade Notes:

Enduring Questions (12 cr)

/_/ SEARCH Sem. Enduring Questions (3) _____
/_/ THE 105 Foundations of Theology (3) _____
/_/ PHI 105 Introduction to Philosophy (3) _____
/_/ COM 101 Composition & Research (3) _____
(C grade or better)

Exploring the Natural World (6-8)

MAT Met with MAT 230 (x) _____
(not MAT 100)
 Met with CHE 104/110 (x) _____
(Science with Lab)

Culture & Language (9 cr)

/_/ COM _____ (3) _____
(not COM 100 or 101)
World Language – 2 courses in sequence

/_/ _____ (3) _____
/_/ _____ (3) _____

Individuals & Communities (6 cr)

/_/ HIS or POS _____ (3) _____
/_/ _____ (3) _____
(PSY, HIS, POS, SOC, SSC, or ECON)

Creative Expressions (6 cr)

/_/ LIT _____ (3) _____
 Met w/THR 244 (x) _____
(Art, Music, or Theatre)

Ethical Leaders & Followers (6 cr)

/_/ THE/PHI _____ (3) _____
(200-400 level)
 THE/PHI Met w/PHI 208 (x) _____
(ethics/morality @ 200 level)

Paths of Knowledge (9 cr @ 200-400 level in ONE path)

Path 1: Interdisciplinary Study; Path

2: Multidisciplinary Study;

Path 3: In-depth Disciplinary Study-MATH

Met in Related w/ MAT in Related Req (9) _____

ENGINEERING (98-103 cr)

Grade Notes:

Engineering Core: (17 cr)

/_/ EGR 107 Engineering Lab Safety (1) _____
/_/ EGR 110 Engineering Design I (1) _____
/_/ EGR 201 Engineering Statics (3) _____
/_/ EGR 206 Mechatronics (3) _____
/_/ EGR 210 Engineering Design II (1) _____
/_/ EGR 480 Senior Capstone Design I (2) _____
/_/ EGR 481 Senior Capstone Design II (2) _____
/_/ EE 200 Circuits I w/Lab (4) _____

- Human Diversity: _____
 Senior Capstone: will be met with EGR 480/481
 Writing Enhanced Course: _____
 Community Service Hours: Required: _____ Met: _____
 Overall GPA >= 2.00
 GPA in Major >= 2.00

Residency Requirements:

- 45 of last 60 credits
 Min 12 Alvernia credits in major
 Min 9 Alvernia credits in minor (if applicable)
Min 123 non-remedial credits earned

Electrical Engineering: (33 cr)

/_/ EE 201 Circuits II (3) _____
/_/ EE 210 Digital Design w/Lab (4) _____
/_/ EE 300 Electronics I w/Lab (4) _____
/_/ EE 301 Electronics II (3) _____
/_/ EE 311 Electromagnetism I (3) _____
/_/ EE 312 Electromagnetism II (3) _____
/_/ EE 331 Energy Storage Devices (3) _____
/_/ EE 400 Communications (4) _____
/_/ EE 410 Adv Materials & Systems (3) _____
/_/ EE 421 Control Systems (3) _____

Industrial Engineering: (29 cr)

/_/ IE 201 Work Systems/Ops Mgmt (4) _____
/_/ IE 211 Modern Manufacturing w/Lab (4) _____
/_/ IE 302 Production & Inventory Contr (3) _____
/_/ IE 310 Stochastic Models/Operations (3) _____
/_/ IE 321 Industrial Automation&Robotics(3) _____
/_/ IE 331 Production Engineering (3) _____
/_/ IE 402 Product Quality (3) _____
/_/ IE 410 Financial Optimization (3) _____
/_/ IE 421 Systems Engineering Design (3) _____

Mechanical Engineering: (30 cr)

/_/ ME 201 Strength of Materials (3) _____
/_/ ME 211 Thermodynamics (3) _____
/_/ ME 302 Dynamics (3) _____
/_/ ME 310 Fluid Mechanics w/Lab (4) _____
/_/ ME 331 Heat Transfer w/Lab (4) _____
/_/ ME 341 Machine Design w/Lab (3) _____
/_/ ME 402 Finite Element Methods (3) _____
/_/ ME 410 Robotics (4) _____
/_/ ME 421 Vibrations w/Lab (3) _____

Major Elective: (9 cr) select from: EGR 311, EE 351 (may be repeated with different topics), any IE or ME 300-400 level course

/_/ _____ () _____
/_/ _____ () _____
/_/ _____ () _____

Related Requirements (42-43 cr)

/_/ CHE 104 General Chemistry I (3) _____
/_/ CHE 110 General Chemistry I Lab (1) _____
/_/ CS 155 Intro Object-Oriented Prog (3) _____
/_/ MAT 230 Calculus I (4) _____
/_/ MAT 231 Calculus II (4) _____
/_/ MAT 322 Differential Equations (3) _____
/_/ MAT 345 Applied Prob & Linear Meth (4) _____
/_/ PHI 208 Ethics & Technology (3) _____
/_/ PHY 200 Physics I (4) _____
/_/ PHY 201 Physics II (4) _____
/_/ PHY 304 Modern Physics (4) _____
/_/ THR 244 Computer Assist Design (3) _____

Electrical & Mechanic Engineering Majors:

/_/ MAT 232 Calculus III (4) _____

Industrial Engineering Majors:

/_/ MAT 209 Probability & Statistics (3) _____