

## BS Electrical 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
<b>Diversity graduation requirement <span style="color: red;">cannot</span> be fulfilled through major courses; students should fulfill this with a Gen Ed SEARCH class</b>			
<b>Writing Enhanced graduation requirement <span style="color: red;">cannot</span> be fulfilled through major courses; students should fulfill this with a Gen Ed SEARCH class</b>			
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>
<b>TOTAL</b>	<b>15</b>	<b>TOTAL</b>	<b>15</b>
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	THE 105 or PHI 105	3
CHE 104: General Chemistry 1	3	EGR 210: Engineering Design II	1
CHE 110: General Chemistry 1 Lab	1	EE 201: Circuits II	3
MAT 332: Vector Calculus	4	EE 210: Digital Design w/Lab	4
EGR 201: Statics	3	MAT 322: Differential Equations	3
THE 105 or PHI 105	<u>3</u>	Gen Ed	<u>3</u>
<b>TOTAL</b>	<b>18</b>	<b>TOTAL</b>	<b>17</b>
Complete 5 hours of Community Service		Complete 5 hours of Community Service	
Semester 5	Credits	Semester 6	Credits
EE 300: Electronics w/Lab	4	EE 301: Electronics II	3
PHY 304: Modern Physics w/Lab	4	EE 312: Electromagnetism I	3
MAT 345: Applied Probability & Linear Methods	4	EE 331: Energy Storage Devices	3
Gen Ed	3	EGR 311: Internship/Research	3
EGR 206: Mechatronics	<u>3</u>	Gen Ed PHI 208	3
<b>TOTAL</b>	<b>18</b>	Gen Ed	<u>3</u>
Complete 5 hours of Community Service		<b>TOTAL</b>	<b>18</b>
Complete 5 hours of Community Service		Complete 5 hours of Community Service	
Semester 7	Credits	Semester 8	Credits
EE 400: Communications	3	EE 421: Control Systems	3
EE 410: Advanced Material & Systems for Electronics & Photonics	3	EGR: 481: Capstone Design II	2
EGR 480: Capstone Design I	3	Major Elective	3
Gen Ed	3	Major Elective	3
Gen Ed	<u>3</u>	Gen Ed	<u>3</u>
<b>TOTAL</b>	<b>15</b>	<b>TOTAL</b>	<b>14</b>
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 of 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: \_\_\_\_\_

2<sup>nd</sup> Major: \_\_\_\_\_ 3<sup>rd</sup> Major: \_\_\_\_\_ Minor: \_\_\_\_\_ 2<sup>nd</sup> 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) \_\_\_\_\_