

Bachelors of Science-Electrical Engineering

Program Description

The goal of the electrical engineering undergraduate program is to prepare graduates for positions as electrical engineers. Following initial course work in mathematics and sciences, the engineering core classes build a solid base of engineering knowledge. Beyond the engineering core, the electrical engineering curriculum includes a number of required electrical engineering and technical elective courses; areas include systems, circuits, power, solid-state devices, electromagnetics and computer engineering. Approved technical elective courses provide students with an opportunity either to broaden their background in electrical engineering or to study, in greater depth, technical subjects in which they have special interest.

Career Opportunities

Graduates with the B.S.E. in electrical engineering find many exciting opportunities in industry. These include semiconductor chip designers and manufacturers, electric power utilities, consulting companies, communication equipment and network providers, computers and peripheral devices manufacturers and defense organizations. The degree also prepares graduates for continued learning experiences, either in a formal graduate program or in continuing education applications.

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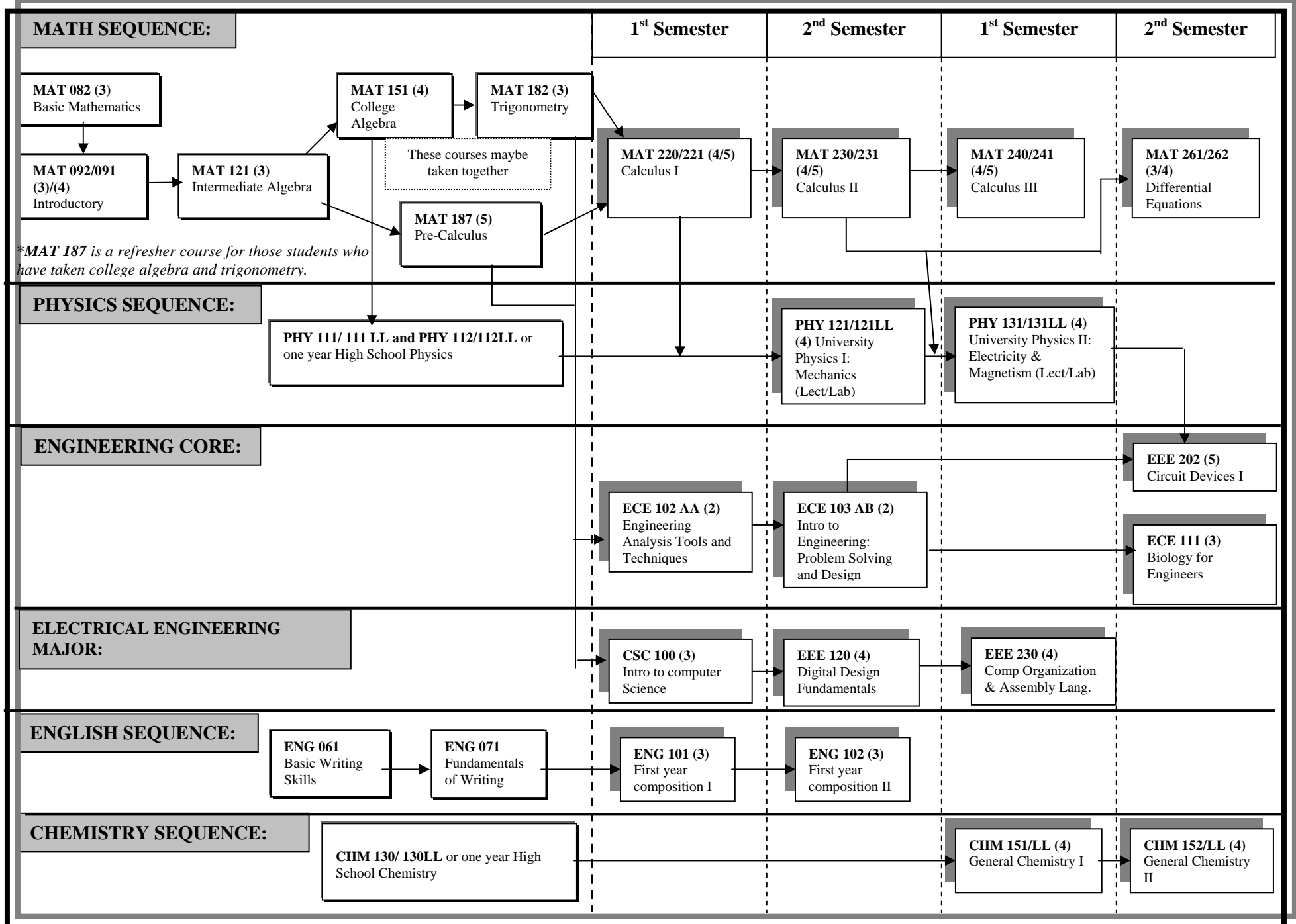
[Department of Electrical Engineering](#) | GWC 205

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ELECTRICAL ENGINEERING

Prerequisite Courses

Required Courses



Electrical Engineering Recommended Study Plan

Year 1		Year 2	
First Semester	Second Semester	Third Semester	Fourth Semester
ECE102 AA (2) Engineering Analysis	ECE103 AB (2) Problem Solving	CHM 151/LL (4) General Chemistry 1 <u>HS algebra and HS chemistry</u>	CHM 152/LL (4) General Chemistry 2 <u>CHM 151/LL</u>
ECE102 AA + ECE 103 AB = CSE 101 (3)			
MAT 220 (4) Calc 1 <u>Mat 187 or MAT182</u> MAT 265 (3)	MAT 230 (4) Calc 2 <u>MAT 220</u> MAT 266 (3)	MAT 240 (4) Calc 3 <u>MAT 220</u> MAT267 (4)	MAT 261 (3) Differential Equation <u>MAT220</u> MAT275 (3)
HU/SB (3)	EEE 120 (4) Digital Design Fundamentals EEE 120 (3)	PHY 131 (4) University Physics 2 <u>PHY 121, MAT 230</u> PHY131 (4)	ECE111 (3) Biology Requirement BME 111 (3)
ENG 101 (3) First Year Composition 1 ENG 101 (3)	ENG102 (3) First Year Composition 2 ENG102 (3)	HU/SB (3)	EEE 202 (4) Circuits 1 <u>pre-co: PHY131, MAT261</u> EEE 202 (4)
CSC 100/110 (3) C++/Java	PHY 121 (4) University Physics 1 <u>MAT 220</u> PHY 121 (4)	EEE 230 (4) Comp Organization & Assembly Lang <u>CSC 100, CSC120</u>	HU/SB (3)
15	16	19	17
<u>Underlined</u> = Pre-req <i>Italic</i> = ASU Equivalence			
CHM151 (4)+CHM152(4)=CHM 114 or CHM 116 (4)			
<p>According to ASU Electrical Engineering advisement sheet: Humanities & Social Sciences (HU/SB) (15 hrs minimum) (Required: 1 course upper division; 2 courses from the same dept; 2 depts. or more Represented; plus a minimum of two courses that satisfy three awareness areas: Cultural (C), Global (G), and Historical (H). Double counting is permissible between HU or SB and the awareness areas and also within the awareness areas.)</p>			

Course Subject and Title <i>(courses in bold/shading are critical)</i>	Hrs.	Upper Division	Completed ATP: <input type="checkbox"/> Yes <input type="checkbox"/> No		Completed AGECE: <input type="checkbox"/> Yes <input type="checkbox"/> No	
			Transfer Course/Grade	Minimum Grade if Required	Additional Critical Requirement Notes	
TERM ONE: 0-15 CREDIT HOURS						
ASU 101-FSE: The ASU Experience	1	<input type="checkbox"/>			<ul style="list-style-type: none"> • Complete MAT 265 with a minimum grade of "C". • ASU 101-FSE should be completed first semester. • An SAT, ACT, Accuplacer, or TOEFL score determines placement into first-year composition courses • ASU Math Placement Exam score determines placement in Mathematics course * CHM 113 is a prerequisite and does not apply towards degree credit **If ENG 105 a 3 hr applicable elective must also be taken prior to graduation. See Advisor. # Designates Major Course: A minimum cumulative GPA of 2.0 required.	
CHM 114: General Chemistry for Engineers (SQ) OR CHM 116: General Chemistry II * (SQ)	4	<input type="checkbox"/>				
# CSE 100: Principles of Programming with C++ (CS) OR # EEE 120: Digital Design Fundamentals	3	<input type="checkbox"/>				
# EEE 101: Introduction to Engineering Design OR BME 111: Engineering Perspectives on Biological Systems	2 or 3	<input type="checkbox"/>				
MAT 265: Calculus for Engineers I	3	<input type="checkbox"/>		Grade of C		
ENG 101 and 102: First-Year Composition OR ENG 107 and 108: English for Foreign Students OR ENG 105: Advanced First-Year Composition **	3	<input type="checkbox"/>		Grade of C		
TERM TWO: 16-30 CREDIT HOURS						
# CSE 100: Principles of Programming with C++ (CS) OR # EEE 120: Digital Design Fundamentals	3	<input type="checkbox"/>				<ul style="list-style-type: none"> • Complete EEE 101 • Complete MAT 266; PHY 121 & 122 each with a minimum grade of "C" # Designates Major Course: A minimum cumulative GPA of 2.0 required.
# EEE 101: Introduction to Engineering Design OR BME 111: Engineering Perspectives on Biological Systems	2 or 3	<input type="checkbox"/>				
MAT 266: Calculus for Engineers II	3	<input type="checkbox"/>		Grade of C		
PHY 121/122: University Physics I/Laboratory I (SQ)	3/1	<input type="checkbox"/>		Grade of C		
ENG 101 and 102: First-Year Composition OR ENG 107 and 108: English for Foreign Students OR ENG 105: Advanced First-Year Composition **	3	<input type="checkbox"/>		Grade of C		
TERM THREE: 31-45 CREDIT HOURS						
# EEE 202: Circuits I	4	<input type="checkbox"/>			<ul style="list-style-type: none"> • Complete EEE 202; MAT 267, 274 or 275 and PHY 131, 132 with a minimum grade of "C" • Complete First Year Composition requirement: ENG 101 & 102 or ENG 107 & 108 or ENG 105 # Designates Major Course: A minimum cumulative GPA of 2.0 required.	
MAT 267: Calculus for Engineers III	3	<input type="checkbox"/>		Grade of C		
MAT 274: Elementary Differential Equations (MA) OR MAT 275: Modern Differential Equations (MA)	3	<input type="checkbox"/>		Grade of C		
PHY 131/132: University Physics II Electricity and Magnetism/ Laboratory II (SQ)	3/1	<input type="checkbox"/>		Grade of C		
TERM FOUR: 46-60 CREDIT HOURS						
# EEE 203: Signals and Systems I	3	<input type="checkbox"/>			<ul style="list-style-type: none"> • Complete EEE 203 and EEE 241 # Designates Major Course: A minimum cumulative GPA of 2.0 required.	
# EEE 241: Fundamentals of Electromagnetics	3	<input type="checkbox"/>				
MAT 342: Linear Algebra (MA) OR MAT 343: Applied Linear Algebra	3	<input checked="" type="checkbox"/>		Grade of C		
PHY 241: University Physics III	3	<input type="checkbox"/>		Grade of C		
Humanities, Fine Arts & Design (HU) AND Cultural Diversity in the US (C), Global Awareness (G) or Historical Awareness (H)	3	<input type="checkbox"/>				
TERM FIVE: 61-75 CREDIT HOURS						
# EEE 334: Circuits II	4	<input checked="" type="checkbox"/>			<ul style="list-style-type: none"> • Area Pathway Courses: (choose 4) EEE 304, 333, 335, 341, 352, 360. Area Pathway courses are prerequisites for Technical Electives. See Advisor for guidance in selection. # Designates Major Course: A minimum cumulative GPA of 2.0 required.	
# EEE 350: Random Signal Analysis	3	<input checked="" type="checkbox"/>				
# EEE 230: Computer Organization and Assembly Language Programming	3	<input type="checkbox"/>				
# Area Pathway Course	4	<input checked="" type="checkbox"/>				
TERM SIX: 76-90 CREDIT HOURS						
ECN 211/212 (SB): Macroeconomic Principles/Microeconomic Principles or ECN 201: Economic Issues & Analysis (SB)	3	<input type="checkbox"/>			<ul style="list-style-type: none"> • Area Pathway Courses: (choose 4) EEE 304, 333, 335, 341, 352, 360. Area Pathway courses are prerequisites for Technical Electives. See Advisor for guidance in selection. # Designates Major Course: A minimum cumulative GPA of 2.0 required.	
# Area Pathway Course	4	<input checked="" type="checkbox"/>				
# Area Pathway Course	4	<input checked="" type="checkbox"/>				
# Area Pathway Course	4	<input checked="" type="checkbox"/>				
TERM SEVEN: 91-105 CREDIT HOURS						
# EEE 488: Senior Design Laboratory I (L)	3	<input checked="" type="checkbox"/>			<ul style="list-style-type: none"> • See Degree Audit Reporting System (DARS) for approved list of Technical Electives # Designates Major Course: A minimum cumulative GPA of 2.0 required.	
Humanities, Fine Arts & Design (HU) AND Cultural Diversity in the US (C), Global Awareness (G) or Historical Awareness (H)	3	<input type="checkbox"/>				
Social & Behavioral Science (SB) AND Cultural Diversity in the US (C), Global Awareness (G) or Historical Awareness (H)	3	<input type="checkbox"/>				
# Technical Elective	3	<input checked="" type="checkbox"/>				
# Technical Elective	3	<input checked="" type="checkbox"/>				
TERM EIGHT: 106-120 CREDIT HOURS						
# EEE 489: Senior Design Laboratory II (L)	3	<input checked="" type="checkbox"/>			<ul style="list-style-type: none"> • See Degree Audit Reporting System (DARS) for approved list of Technical Electives # Designates Major Course: A minimum cumulative GPA of 2.0 required.	
# Technical Elective	3	<input checked="" type="checkbox"/>				
# Technical Elective	3	<input checked="" type="checkbox"/>				
# Technical Elective	3	<input checked="" type="checkbox"/>				
UD Humanities, Fine Arts & Design (HU) OR Social Behavioral & Science (SB)	3	<input checked="" type="checkbox"/>				

Graduation Requirements Summary:

Total Hours Regular Curriculum (120)	Total UD Hrs (45 min)	Total Hrs at ASU (30 min)	Cumulative GPA (2.00 minimum)	Major GPA (2.00 minimum GPA)	Hrs Resident Credit for Academic Recognition (56 min)	Total Comm. College Hrs. (64 Max)

General University Requirements: Legend

- General Studies Core Requirements:
 - Literacy and Critical Inquiry (L)
 - Mathematical Studies (MA)
 - Computer/Statistics/Quantitative applications (CS)
 - Humanities, Fine Arts, and Design (HU)
 - Social and Behavioral Sciences (SB)
 - Natural Science-Quantitative (SQ)
 - Natural Science-General (SG)
- General Studies Awareness Requirements
 - Cultural Diversity in the US (C)
 - Global Awareness (G)
 - Historical Awareness (H)
- First-Year Composition

Additional Notes: