

# Curriculum Map for BS Electrical Engineering

## Relationship of Outcomes to Required Courses

	Credits	OUTCOMES										
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>MATHEMATICS</b>												
Math 241 Calculus	4											
Math 242 Calculus II	4											
Math 243 Calculus III	3											
Math 307 Linear Algebra & Diff Equations	3											
EE 342 Probability & Statistics	3											
<b>BASIC SCIENCES</b>												
Chem 161 General Chem I	3											
Chem 161L General Chem I Lab	1											
Chem 162 General Chem II	3											
Phys 170 General Physics I	3											
Phys 170L General Physics I Lab	1											
Phys 172 General Physics II	3											
Phys 172L General Physics II Lab	1											
Phys 274 General Physics III	3											
<b>ENGINEERING REQUIRED</b>												
EE 160 Programming for Engineers	4											
EE110 Intro to Engineering Computation	3											
EE 211 Basic Circuit Analysis I	4											
EE 213 Basic Circuit Analysis II	4											
EE 260 Intro to Digital Design	4											
EE 296 Sophomore Project	1											
EE 315 Signals & Systems Analysis	3											
EE 323 Microelectronic Circuits I	3											
EE 323 Microelectronic Circuits I Lab	1											
EE 324 Physical Electronics	3											
EE 371 Engineering Electromagnetics I	3											
EE 396 Junior Project	2											
EE 495 Ethics in Electrical Engineering	1											
EE 496 Capstone Design Project	3											
Engineering Breadth												
<b>GENERAL EDUCATION</b>												
ENG 100 Composition I	3											
COMG 251 Principles of Eff Pub Speaking I	3											
Writing Intensive (W)-- 5 courses												
Oral Communication (O)-- 1 course												
Hawaiian, Asian, and Pac Issues (H) -- 1 course												
Global & Multicultural Perspectives	6											
Social Science	3											
Economics ECON 120, 130, or 131	3											
Key: <span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: white; margin-right: 5px;"></span> (= 1, no emphasis) <span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: gray; margin-left: 20px; margin-right: 5px;"></span> (=2, some emphasis) <span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: black; margin-left: 20px; margin-right: 5px;"></span> (=3, moderate emphasis) <span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: black; margin-left: 20px;"></span> (=4, significant emphasis)												

Relationship of Outcomes to Track Group I Courses.  
Group I courses are required of all students within that track

	Credits	OUTCOMES													
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)			
<b>ELECTROPHYSICS TRACK GROUP I</b>															
EE 326 Microelectronic Circuits II	3														
EE 326L Microelectronic Circuits II Lab	1														
EE 327 Theory & Design of IC Devices	3														
EE 372 Engineering Electromagnetics II	3														
EE 372L Engineering Electromagnetics II Lab	1														
<b>SYSTEMS TRACK GROUP I</b>															
EE 343 Intro to Communication Systems	3														
EE 343L Communication Systems Lab	1														
EE 351 Linear Systems & Control	3														
EE 351L Linear Sys & Control Lab	1														
EE 415 Digital Signal Processing	4														
Key:			(= 1, no emphasis)				(=3, moderate emphasis)				(=2, some emphasis)			(=4, significant emphasis)	

Relationship of Outcomes to Track Group II Courses.  
Group II courses are electives

	Credits	OUTCOMES																		
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)								
<b>ELECTROPHYSICS TRACK GROUP II</b>																				
EE 328 Microcircuit Fabrication	3																			
EE 328L Microcircuit Fabrication Lab	1																			
EE 426 Advanced Si IC and Solid State Devices	3																			
EE 427 Computer aided circuit design	3																			
EE 435 Electric Power Systems	3																			
EE 438 Renewable Energy	3																			
EE 471 Computational Techniques in Electromagnetics	3																			
EE 473 Microwave Engineering	3																			
EE 474 Antennas	3																			
EE 475 Optical Communications	3																			
EE 477 Fund. Radar, Sonar, and Navigation Systems	3																			
EE 480 Intro to Biomedical and Clinical Engineering	3																			
<b>SYSTEMS TRACK GROUP II</b>																				
EE 416 Introduction to Digital Image Processing	3																			
EE 417 Introduction to Optimization	3																			
EE 435 Electric Power Systems	3																			
EE 442 Digital Communications	3																			
EE 445 Machine Learning	3																			
EE 449 Computer Communication Nets	3																			
EE 452 Digital Control Systems	3																			
<p style="text-align: center;">Key:</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="width: 20px; height: 15px; background-color: white; border: 1px solid black;"></td> <td>(=1, no emphasis)</td> </tr> <tr> <td style="width: 20px; height: 15px; background-color: #cccccc; border: 1px solid black;"></td> <td>(=2, some emphasis)</td> </tr> <tr> <td style="width: 20px; height: 15px; background-color: #808080; border: 1px solid black;"></td> <td>(=3, moderate emphasis)</td> </tr> <tr> <td style="width: 20px; height: 15px; background-color: #404040; border: 1px solid black;"></td> <td>(=4, significant emphasis)</td> </tr> </table>														(=1, no emphasis)		(=2, some emphasis)		(=3, moderate emphasis)		(=4, significant emphasis)
	(=1, no emphasis)																			
	(=2, some emphasis)																			
	(=3, moderate emphasis)																			
	(=4, significant emphasis)																			

Laboratory Courses that Contribute to Outcome 2.

Laboratory Types	Courses
<b>Basic Science</b>	CHEM 161L General Chemistry Lab I PHYS 170L General Physics I Lab PHYS 272L General Physics II Lab
<b>EE Required</b>	EE 211 Basic Circuit Analysis I EE 213 Basic Circuit Analysis II EE 260 Introduction to Digital Design EE 323L Microelectronic Circuits I Lab
<b>Electrophysics Track Group I</b>	EE 326L Microelectronics Circuits II Lab EE 372L Engineering Electromagnetics II Lab
<b>Systems Track Group I</b>	EE 343L Introduction to Communication Systems Lab EE 351L Linear Systems and Control Lab