BSECE - ELECTRICAL AND COMPUTER ENGINEERING (BIOMEDICAL CONCENTRATION)

Degree Requirements: BSECE - Electrical and Computer Engineering Major (Biomedical Concentration)

Code	Title	Hours
Required Courses		
Minimum 124 hours including the following:		
Literature and Writing		
ENG 1310	Research Writing: Writing and Academic Inquiry Seminars	3
GTX 2301	Intellectual Traditions of the Ancient World : Literature and Thought	3
or GTX 2302	Medieval Intellectual Traditions: Literature and Thought in Context	
PWR 3300	Technical Writing	3
Religion		
REL 1310	The Christian Scriptures	3
REL 1350	The Christian Heritage	3
Foreign Language and Culture		
Foreign Language and Culture Distribution List (ECS) (https://catalog.baylor.edu/undergraduate/school-engineering-computer-science/#EN-FLC-DL)		3
Other Requirements		
PSC 1387	The U.S. Constitution, Its Interpretation, and the American Political Experience	3
or ENG 2301	British Literature	
EGR 2108	Engineering Economics	1
EGR 3305	Social and Ethical Issues in Engineering	3
or EGR 3315	Ethics of International Service	
EGR 1101	Engineering New Student Experience	1
Lifetime Fitness: Any one LF 11XX course. ECS 2101 and select leadership courses may fulfill one of the Lifetime Fitness requirement.		1
Chapel: Two Semesters		0
General Elective Credit		3
Mathematics and Basic Sciences		
CHE 1301	Basic Principles of Modern Chemistry I	3
MTH 1321	Calculus I	3
MTH 1322	Calculus II	3
MTH 2311	Linear Algebra	3
MTH 2321	Calculus III	3
MTH 3325	Ordinary Differential Equations	3
STA 3381	Probability and Statistics	3
PHY 1420	General Physics I	4
PHY 1430	General Physics II	4
Mathematics Elective		
Select one course from the following:		3
MTH/CSI 3324	Numerical Methods	
MTH 3326	Partial Differential Equations	
MTH 4322	Numerical Analysis	
MTH 4324	Systems of Ordinary Differential Equations	
MTH 4329	Theory of Functions of a Complex Variable	
STA 4374	Statistical Process Control	
Electrical and Computer Engineering Major (Biomedical Concentration)		
Required Courses		
EGR 1301	Introduction to Engineering	3
EGR 1302	Introduction to Engineering Analysis	3
EGR 3380	Engineering Design I	3
CSI 1430	Introduction to Computer Science I with Laboratory	4
ELC 2337	Digital Logic Design	3
ELC 2137	Digital Logic Design Laboratory	1
ELC 2330	Electrical Circuit Theory	3
ELC 2130	Electrical Circuit Laboratory	1
ELC 3114	Electronic Design Laboratory	1
ELC 3314	Electronic Design	3
ELC 3335	Signals and Systems	3
ELC 3336	Microprocessor Systems	3
ELC 3337	Applied Electromagnetic Fields	3
ELC 3338	Computer Organization	3
ELC 4332	Automatic Control Systems	3
ELC 4351	Digital Signal Processing	3
ELC 4438	Embedded Systems Design	4
BME 4376	Introduction to the Design and Evaluation of Medical Devices	3
Biomedical Engineering Electives		
BME Elective 1 - Select one of the following:		3
BME 4372	Bioinstrumentation	
BME 4378	Introduction to Biosensors	
BME Elective 2 - Select one of the following:		3
BME 4353	Image Formation and Processing	
BME 4355	Medical Imaging	
BME Elective 3 - Select one of the following:		3
BME 4396	Special Topics in Biomedical Engineering	
Any course not taken to fulfill BME Elective 1 or BME Elective 2.		
Engineering Electives		
Select one course from the following or any course not taken to fulfill BME Elective 1, BME Elective 2, or BME Elective 3.:		3
EGR 3V95	Internship Experience	
EGR 4360	Renewable Energy Devices	
EGR 4375	Elements of Nuclear Engineering	
ELC 4311	Advanced Logic Design	
ELC 4312	Softcore System on a Chip (SoC)	
ELC 4313	Advanced Computer Architecture	
ELC 4315	VLSI	
ELC 4317	Verification and Validation in Digital Systems	

ELC 4318	Avionics System Design
ELC 4319	Massively Parallel Programming
ELC 4320	Introduction to Optics
ELC 4321	Computational Photonics
ELC 4322	Integrated Photonics
ELC 4323	Solid-State Materials
ELC 4324	Semiconductor Devices
ELC 4325	Fundamentals of Lasers
ELC 4326	Optoelectronics
ELC 4329	Introduction to Microfabrication
ELC 4330	Introduction to Robotics
ELC 4331	Electric Machines and Drives
ELC 4334	Modeling & Control of Electric Machines
ELC 4340	Power Systems
ELC 4345	Power Electronics
ELC 4350	Principles of Communication
ELC 4353	Image Formation and Processing
ELC 4357	Cardiovascular Engineering and Instrumentation
ELC 4360	Software Systems
ELC 4362	Wireless Sensor Networks
ELC 4363	Networks and Security
ELC 4366	Quantum Mechanics for Engineers
ELC 4367	Introduction to Quantum Computing
ELC 4372	Bioinstrumentation
ELC 4377	Solar Energy
ELC 4378	Introduction to Biosensors
ELC 4381	Antennas and Wireless Propagation I
ELC 4383	RF/Microwave Circuits I
ELC 4384	RF/Microwave Circuits II
ELC 4396	Special Topics in Electrical or Computer Engineering
ELC 4V97	Special Projects in Electrical or Computer Engineering
ME 4305	Sustainable Engineering
A grade of "C" or better in all the Electrical and Computer Engineering hours counted towards the major.	
Total Hours	**124**