

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING WITH A CONCENTRATION

Optional areas of concentration have been defined within the Department of Electrical and Computer Engineering to allow a student to develop strength in a particular area of interest. Students satisfying the requirements of an area of concentration may have that fact noted on their transcripts. A student may choose only one area of concentration, and he or she is not required to select any. Any students interested in a concentration must contact the Department with their selection prior to the first semester of their senior year. Students may select from the following choices:

Communications

Students must take the following prerequisite course :

COURSE	CREDIT HOURS	TITLE
ECGR 4123	3	Analog and Digital Communication

Students must take **three** classes chosen from the following list:

COURSE	CREDIT HOURS	TITLE
ECGR 3123	3	Data Communications and Networking
ECGR 4101	3	Embedded Systems
ECGR 4124	3	Digital Signal Processing
ECGR 4139	3	Digital Communication Systems
ECGR 4186	3	Optical Communication and Optical Signals
ECGR 4422	3	Random Processes and Optimum Filtering

Electromagnetics

Students must take **three** classes chosen from the following list:

COURSE	CREDIT HOURS	TITLE
ECGR 4121	3	Antennas
ECGR 4261	3	Microwave Circuit Design I
ECGR 4125	3	Foundation of Optical Engineering
MATH 2242	3	Calculus IV

Electronic Circuit Design

Students must take **three** classes chosen from the following list:

COURSE	CREDIT HOURS	TITLE
ECGR 3134	3	Industrial Electronics
ECGR 3181	3	Logic System Design II
ECGR 4131	3	Linear Integrated Electronics
ECGR 4132	3	Analog Integrated Circuit Design
ECGR 4261	3	Microwave Circuit Design I

Microelectronics

Students must take the following prerequisite course :

COURSE	CREDIT HOURS	TITLE
ECGR 3133	3	Solid State Microelectronics I

Students must take **three** classes chosen from the following list:

COURSE	CREDIT HOURS	TITLE
ECGR 4134	3	Solid State and Semiconductor Microelectronics II
ECGR 4137	3	Device Electronics for Integrated Circuits
ECGR 4138	3	Electronic Thin Film Materials and Devices
ECGR 4140	3	Introduction to VLSI Processing

Optical Engineering

Students must take the following prerequisite course :

COURSE	CREDIT HOURS	TITLE
ECGR 3133	3	Solid State Microelectronics I

Students must take **three** classes chosen from the following list:

COURSE	CREDIT HOURS	TITLE
ECGR 4125	3	Foundations of Optical Engineering
ECGR 4165	3	Laser Electronics I
ECGR 4186	3	Optical Communication and Optical Signals
ECGR 4193	3	Experiments in Modern Optical Engineering
ECGR 4231	3	Sensors and Actuators

Power Systems and Power Electronics

Students must take the following prerequisite course :

COURSE	CREDIT HOURS	TITLE
ECGR 3142	3	Electromagnetic Devices

Students must take **three** classes chosen from the following list:

COURSE	CREDIT HOURS	TITLE
ECGR 3134	3	Industrial Electronics
OR (cannot take both ECGR 3134 and ECGR 4143)		
ECGR 4143	3	Electrical Machinery
ECGR 4141	3	Power Systems Analysis I
ECGR 4142	3	Power System Analysis II

Signal Processing

Students must take the following prerequisite course :

COURSE	CREDIT HOURS	TITLE
ECGR 4124	3	Digital Signal Processing

Students must take **three** classes chosen from the following list:

COURSE	CREDIT HOURS	TITLE
ECGR 4101	3	Embedded Systems
OR (cannot take both ECGR 4101 and ECGR 4146)		
ECGR 4146	3	Introduction to VHDL
ECGR 4103	3	Applied Computer Graphics
ECGR 4111	3	Control Systems Theory I
ECGR 4112	3	Control Systems Theory II
ECGR 4122	3	Acoustics
ECGR 4123	3	Analog and Digital Communication
ECGR 4125	3	Foundation of Optical Engineering
ECGR 4139	3	Digital Communication Systems
ECGR 4422	3	Random Processes and Optimum Filtering

Controls

Students must take the following prerequisite course :

COURSE	CREDIT HOURS	TITLE
ECGR 3112	3	System Analysis II
ECGR 3142	3	Electromagnetic Devices

Students must take **three** classes chosen from the following list:

COURSE	CREDIT HOURS	TITLE
ECGR 4111	3	Control System Theory I
ECGR 4112	3	Control System Theory II
MATH 2164	3	Matrices and Linear Algebra