

CULLEN COLLEGE of ENGINEERING Department of Electrical & Computer Engineering

# Electrical Engineering Official Degree Plan

# SCHEDULE AN APPOINTMENT WITH A FACULTY ADVISOR ACCORDING TO YOUR SELECTED CONCENTRATION AREA (EE) OR DEGREE MAJOR (CPE)

Applied Electromagnetics: Dr. David Jackson (djackson@uh.edu)

Computer & Embedded Systems & CpE Majors: Dr. Yuhua Chen (yuhuachen@uh.edu)

Electronics: Dr. Len Trombetta (trombett@central.uh.edu)

Nanosystems: Dr. Stanko Brankovic (srbranko@central.uh.edu)

Power: Dr. Harish Krishnamoorthy (hskrishn@uh.edu)

Signals, Communications & Controls: Dr. Bhavin Sheth (brsheth@central.uh.edu)

# PREPARE FOR YOUR APPOINTMENT

- Complete the attached degree plan form by reflecting your degree progress using <u>MyUH Advisement Report</u>.
- Select your electives. View the <u>UH Course Catalog</u> to review course descriptions and requirements.
- Use the semester to semester plan template to map out your remaining semesters, using the ECE expected <u>course offerings</u> to plan ahead.
- Bring your notes & questions to your appointment to collaborate with your faculty advisor.

# GET YOUR DEGREE PLAN APPROVED AND SUBMIT TO THE ECE OFFICE

- Save a copy of your approved degree plan and semester to semester plan document for your student records.
- Submit your *signed* degree plan form (one page only) to the ECE Office <u>HERE</u>.
- Follow up with your faculty advisor to discuss any potential changes.

# Areas of Concentration & Elective Course Selection

Concentration area courses in bold text are required electives and must be included in the total concentration electives required for EE degree majors.

# **APPLIED ELECTROMAGENTICS**

ECE 3318 ECE 5317/5113 ECE 5318/5114	Applied Electricity & Magnetism Microwave Engineering Antenna Engineering	
ECE 3364	Circuits & Systems	
ECE 3366	Introduction to DSP	
ECE 3456	Analog Electronics	
ECE 4339/4119	Physical Principles of Solid State Devices	
ECE 4363/4113	Energy Conversion Devices	
ECE 4371/4117	Advanced Telecommunications Engineering	
ECE 5319	Introduction to Nanotechnology	
ECE 5358	Modern Optics & Photonics	

# **ELECTRONICS**

ECE 3364 ECE 3456 ECE 3457 ECE 4339/4119	Circuits & Systems Analog Electronics Digital Electronics Physical Principles of Solid State Devices
ECE 3318	Applied Electricity & Magnesium
ECE 5317/5113	Microwave Engineering
ECE 5318/5114	Antenna Engineering
ECE 5319	Introduction to Nanotechnology
ECE 5320	Introduction to Nanomaterials Engineering
ECE 5321	Design & Fabrication of Nanoscale Devices
ECE 5340	Introduction to Well-Logging Techniques
ECE 5356	CMOS Analog Integrated Circuits
ECE 5358	Modern Optics & Photonics

# POWER

ECE 3318 ECE 3364 ECE 4363/4113 ECE 5377/5127	Applied Electricity & Magnetism Circuits & Systems Energy Conversion Devices Power Systems Analysis
ECE 4375/4115	Automatic Control Systems
ECE 5335/5115	State-Space Engineering
ECE 5380/5180	Power Electronics & Electric Devices
ECE 5388	Renewable Energy Technology

# SIGNALS, COMMUNICATIONS & CONTROLS

ECE 3366 ECE 5397/4117 ECE 4375/4115	Introduction to DSP Advanced Telecommunications Engineering Automatic Controls Systems
ECE 3364	Circuits & Systems
ECE 4437	Embedded Microcomputer Systems
ECE 5317/5113	Microwave Engineering
ECE 5318/5114	Antenna Engineering
ECE 5330	Introductions to Robotics
ECE 5335/5115	State-Space Engineering
ECE 5440	Advanced Digital Design
ECE 5451	Internetworking
ECE 5357	Introduction to Cybersecurity
ECE 5397	Robotics & ROS
ECE 5397	Introduction to Machine Learning

# **COMPUTER & EMBEDDED SYSTEMS**

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ECE 4437 or	Embedded Microcomputer Systems OR		
ECE 5440	Advanced Digital Design		
ECE 5367	Introduction to Computer Architecture & Design		
COSC 1437	Introduction to Programming		
ECE 3366	Introduction to DSP		
ECE 3456	Analog Electronics		
ECE 3457	Digital Electronics		
ECE 4375/4115	Automatic Control Systems		
ECE 4437	Embedded Microcomputer Systems		
ECE 5330	Introduction to Robotics		
ECE 5440	Advanced Digital Design		
ECE 5451	Internetworking		
ECE 5357	Introduction to Cybersecurity		
ECE 5397	Robotics & ROS		
ECE 5397	Introduction to Machine Learning		
ECE 5436	Advanced Microprocessor		
COSC 2436	Programming & Data Structures		

## NANOSYSTEMS

ECE 4339/4119 ECE 5319 ECE 5320 ECE 5321	Physical Principles of Solid State Devices Introduction to Nanotechnology Introduction to Nanomaterials Engineering Design & Fabrication of Nanoscale Devices
ECE 3318	Applied Electricity & Magnetism
ECE 3364	Circuits & Systems
ECE 4363/4113	Energy Conversion Devices
ECE 5317/5113	Microwave Engineering
ECE 5318/5114	Antenna Engineering
ECE 5356	CMOS Analog Integrated Circuits
ECE 5380/5180	Power Electronics & Electric Devices

# **TECHNICAL ELECTIVE OPTIONS**

ECE ****	Choice of 3000 - 5000 level ECE elective
PHYS 3312	Modern Optics
PHYS 3315	Modern Physics I
MATH 3355	Vector Analysis
MATH 3364	Complex Analysis
MATH 4364	Numerical Analysis
MECE 2334	Introduction to Thermodynamics
MECE 3400	Introduction to Mechanics

# Degree Plan: Electrical Engineering

#### Name:

ECE BAS	E	
UH TR		
	ENGI 1100	Introduction to Engineering
	ENGI 1331	Computing for Engineers
	ENGI 2304	Technical Communications
	ECE 2201	Circuits Analysis I
	ECE 2202	Circuit Analysis II
	ECE 2100	Circuit Analysis Lab
	ECE 3331	Programming Applications in ECE
	ECE 3441	Digital Logic Design
	ECE 3155	Electronics Lab
	ECE 3355	Electronics
	ECE 3337	Signals & Systems Analysis
	ECE 3317	Applied EM Waves
	ECE 3436	Microprocessor Systems
	ECE 3340	Numerical Methods
	INDE 2333	Engineering Statistics

#### MATHEMATICS

MATH 24 MATH 24	414 Calc	ulus I ulus II
MATH 24 MATH 33	321 Engi	ulus III neering Mathematics Ordinary Differential Equations
	AND	AND Linear Algebra

#### SCIENCE

	CHEM 1311 CHEM 1111 PHYS 2325	Fundamentals of Chemistry* Fundamentals of Chemistry Lab University Physics I
	PHYS 2125	University Physics Lab I
	PHYS 2326	University Physics II
	PHYS 2126	University Physics Lab II

#### STATE CORE REQUIREMENTS

UH TR	COMMUNICATIONS (6 hours)		
	ENGL 1301	First Year Writing I	
	ENGL 1302	First Year Writing II	
	AMERICAN HIS	STORY (6 hours)	
	HIST 1301	The United States to 1877	
	HIST 1302	The United States since 1877	
	GOVERNMEN	/POLITICAL SCIENCE (6 hours)	
	GOVT 2305	U.S. Government	
	GOVT 2306	U.S. & TX Constitution & Politics	
	APPROVED C	<u> ORE (6 hours)</u>	
	- ECON 2302	- Social & Behavioral Sciences	
	- ENGI 2304 ·	<ul> <li>Writing in the Discipline</li> </ul>	
		Language, Philosophy & Cultur	
		Creative Arts	

# Comments:

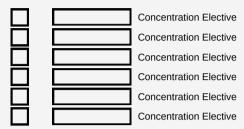
PeopleSoft ID:

### Date:

#### **Category 1: Concentration Area**

- · EE students must include the required concentration electives and chose their remaining electives from their concentration area.
- EE students are responsible to complete a total of 6 concentration electives in all.

#### CONCENTRATION AREA :\_



#### **Category 2: Elective Courses**

EE students are required to choose

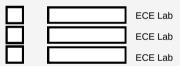
- 2 ECE Electives (ECE elective be any ECE 3000 5000 ECE course)
- 1 Technical Elective (Choose one from the technical course elective options)

	ECE Elective
	ECE Elective
	Tech Elective

#### Category 3: ECE Labs

EE students are required to complete 3 ECE labs.

- ECE labs will come from concentration and/or elective course selections.
- 4 credit electives include a lab hour (Ex: ECE 5440)
- 1 credit courses partner with many 3 credit ECE elective options (Ex: ECE 4375/4115)



#### ECE CAPSTONE DESIGN

Students must attend a Capstone Design Orientation the semester before enrolling in ECE 4335. Check Capstone Design website for details.

ECE 4335 Capstone Senior Design I ECE 4336 Capstone Senior Design II

#### RULES YOU NEED TO KNOW:

- 1.C- Rule: COE requires a grade of "C-" or better for credit in any mathematics, science, or engineering course that applies toward the bachelor's degree. In addition, the "C-" is required for any mathematics, science, or engineering course used as a prerequisite for a subsequent course.
- 2. Last 30 hours must be exclusively completed at UH
- 3.MAXIMUM of 66 lower level transfer hours may be applied towards UH degree
- 4. MAX NUMBER OF ATTEMPTS: COE does not allow a student to attempt Engineering courses more than two times and science or mathematics more than three times 5. MINIMUM of a 2.00 GPA in cumulative, major, and minor GPA to graduate

I certify I met with the student above and reviewed their remaining concentration and degree electives.

Advisor's Name (printed):

\_\_\_\_\_ Advisor's Signature: \_\_\_\_

Submit your signed degree plan form to the ECE Office HERE.

# Semester to Semester Plan

Name	Projected Graduation Date		
Cougar ID		Semester	Year
Degree Program			

## Semester:

Course Title	Credit
Course The	Hours

Semester:		
Course Title	Credit	
	Hours	

Semester:		
Course Title	Credit	
	Hours	
L		

## Semester:

Course Title	Credit Hours

# Semester:

Course Title	Credit
Course Inte	Hours

# Semester:

Course Title	Credit
course ritle	Hours

## Semester:

Course Title	Credit
course mile	Hours

#### Semester:

Course Title	Credit
Course Title	Hours

## Semester:

Course Title	Credit
course ritle	Hours