

# ECE - Systems, Signals, and Communications Track

Revised: 03/10/2009

## Non-MECOP Plan

This guide is for planning purposes only. Course offerings subject to change.

	Fall	Winter	Spring	Summer			
Freshman	MTH 251*	4	MTH 252*	4	MTH 254*	4	
	ECE 111	3	ECE 112*	3	CS 161	4	
	CH 201*	3	MTH 231	4	ECE 271	3	
	WR 121*	3	Perspective	3	ECE 272	1	
			Lifetime Fitness	3	PH 211*	4	
Total	13	Total	17	Total	16	Total	0
Sophomore	MTH 256*	4	MTH 306*	4	MTH 255	4	
	PH 212*	4	PH 213*	4	WR 327	3	
	ENGR 201*	3	ENGR 202*	3	ENGR 203	3	
	COMM 111/114*	3	CS 162	4	CS 261	4	
					<i>Apply to Pro</i>		
Total	14	Total	15	Total	14	Total	0
Junior	ECE 375	4	ECE 322	4	ECE 323	4	
	ECE 351	3	ECE 352	4	ECE 353	3	
	ECE 390	4	ECE 391	4	ECE 372	4	
	Bio+Lab	4	Perspective	3	ENGR 390	3	
	Total	15	Total	15	Total	14	Total
Senior	ECE 441	2	ECE 442	2	ECE 443	2	
	ECE 468	3	ECE 464	4	ECE 462	4	
	<i>Restricted Elective</i>	3	ECE 461	4	DPD/ECE 474/499 -Sensors	4	
	DPD/ECE 422/473/CS450	4	DPD/ECE 423/451/CS556	4	CS 391	3	
	Perspective	3	Perspective	3	Contemporary Global Issues	3	
Total	15	Total	16	Total	16	Total	0

Total Credits: 180

## MECOP Plan

	Fall	Winter	Spring	Summer			
Freshman	MTH 251*	4	MTH 252*	4	MTH 254*	4	
	ECE 111	3	ECE 112*	3	CS 161	4	
	CH 201*	3	MTH 231	4	ECE 271	3	
	WR 121*	3	Perspective	3	ECE 272	1	
			Lifetime Fitness	3	PH 211*	4	
Total	13	Total	17	Total	16	Total	0
Sophomore	MTH 256*	4	MTH 306*	4	MTH 255	4	
	PH 212*	4	PH 213*	4	WR 327	3	
	ENGR 201*	3	ENGR 202*	3	ENGR 203	3	
	COMM 111/114*	3	CS 162	4	CS 261	4	
					<i>Apply to Pro &amp; MECOP</i>		
Total	14	Total	15	Total	14	Total	0
Junior	ECE 375	4	ECE 322	4			
	ECE 351	3	ECE 352	4			
	ENGR 390	3	ECE 353	3	MECOP Internship		MECOP Internship
	ENGR 407	1	ECE 391	4			
	ECE 390	4					
Total	15	Total	15				
Senior 1	ECE 441	2	ECE 442	2	ECE 443	2	
	ECE 323	4	ECE 464	4	ECE 462	4	
	ECE 468	3	ECE 461	4	DPD/ECE 474/499 -Sensors	3	MECOP Internship
	DPD/ECE 422/473/CS450	4	DPD/ECE 423/451/CS556	4	ECE 372	4	
	ENGR 407	1	Perspective	3	Perspective	3	
Total	14	Total	17	Total	16		
Senior 2			Bi+Lab	4			
			Perspective	3			
	MECOP Internship		<i>Restricted Elective</i>	3			
			CS 391	3			
			Contemporary Global Issue	3			
Total		Total	16				

Total Credits: 182

## Track Specific Courses (#) = number of credits

### Required (16)

### Restricted Electives (14); Select at least three courses from:

ECE 461	W	ECE 390	F	ECE 473	F	CS 331 (has prereqs)
ECE 462	Sp	ECE 422	F	ECE 474	Sp	CS 434 (has prereqs)
ECE 464	W	ECE 423	W	ECE 499 - Sensors	Sp	CS 450 F
ECE 468	F	ECE 451/ME 430	FW			CS 556 W

## Track Description

Signals, including audio (speech, acoustics, music), image (video, multimedia, medical scans) and remote sensing data, are phenomena that vary with time, space, or other parameters. Systems can be regarded as devices that manipulate signals. The disciplines of signal and image processing are concerned with the analysis and synthesis of signals and their interaction with systems. In communications, the objective is to transfer information (signals) from one or many sources to one or many destinations, which requires the design of transmission schemes (e.g., modulation and coding), receivers, and filters. The Systems, Signals and Communications track covers the fundamentals of analog and digital signals and systems, the mathematical tools for the analysis of determinate and random signals, and applications to digital signal processing, digital image processing, and digital/analog communications.

## Employment

Employment opportunities range across a large variety of areas such as the cell-phone industry, fiber optic communications, ADSL and broadband cable communications, sound and audio engineering, speech recognition, medical imaging systems (X-Rays, CT, MRI, PET), DSP hardware and software design, printing industry, digital displays (CRT, LCD, plasma), digital cameras and camcorders, image compression standards (JPEG, MPEG).

**Bolded** courses in Freshman and Sophomore years should be completed prior to beginning the professional program

**Bolded and Italicized** courses should be completed prior to first MECOP internship