

## UNIVERSITY OF FLORIDA ECE UF-EDGE OFFERINGS: Communications/Electronics

Fall 06	Spring 07	Summer 07	Fall 07	Spring 08	Summer 08	Fall 08	Spring 09	Summer 09	Fall 09	Spring 10	Summer 10	Fall 10	Spring 11
EEE 5320	EEE 6321	EEL 5701	EEE 5322	EEL 6825									
EEL 5544	EEL 6535	EEL 5718	EEL 6591	EEL 6509									
			EEE 5320	EEE 6321	EEL 5701	EEE 5322	EEE 6374						
			EEL 5544	EEL 6535	EEL 5718	EEL 6591	EEL 6509						
						EEL 5544	EEL 6535	EEL 5718	EEL 6591	EEL 6509			
						EEL 6562	EEL 6825	EEL 5701	EEE 5322	EEE 6374			
									EEL 5544	EEL 6535	EEL 5718	EEL 6591	EEL 6509
									EEE 5320	EEE 6321	EEL 5701	EEE 5322	EEE 6374

## UNIVERSITY OF FLORIDA ECE UF-EDGE OFFERINGS: Semiconductor Devices

Fall 08	Spring 09	Summer 09	Fall 09	Spring 10	Summer 10	Fall 10	Spring 11
EEE 5322	EMA 6616	EEL 5701	EMA 6510	EEE 5400			
EEE 5426	EEE 6397	EMA 6507	EEE 5320	EEE 6321			
	EEE 5400?				EEE 5322	EMA 6616	EEL 5701
			EEE 5426	EEE 6397	EMA 6507	EEE 5320	EEE 6321

<p>EEE 5320 EEE 6321 EEL 5544 EEL 6535 EEL 5718 EEL 6507 EEL 6591 EEL 6562 EEL 6825 EEE 5426 EEE 6397 EEE 5400 EEE 5322 EEE 6374 EEL 6509 EEL 5701 EGM 6341 EMA 6110 EMA 6616 EMA 6510 EMA 6507C</p>	<p>Bipolar Analog IC Design MOS Analog IC Design Noise in Lin Systems Digital Comm Computer Comm Queueing Theory &amp; Data Comm. Wireless Networks Image Proc/Computer Vision Pattern Rec &amp; Intell Systems Intro Quantum Mech for Nanodev Semicond Dev Theory Future of uElectronics Techn VLSI Circuits &amp; Technology RF Circuits &amp; Technology Wireless Comm. DSP Num. Meth. Of Engin. Analy. Electronic Theory of Materials Adv. Electronic Materials Process. Survey of Materials Characterization Scanning Electron Microscopy</p>	<p>Fox Fox Wong, Shea Yang, Shea Latchman, McNair Boykin McNair Wu Slatton Guo, Ural Nishida, Bosman Thompson Eisenstadt Lin Wu Taylor, Yang Klausner Norton Pearton</p>	<p>Amplifier stages, active loads, output stages, op-amps, feedback, frequency response, compensation. Design of analog circuits in CMOS IC technology. MOS switches, MOS op amp circuits, circuit simulation using SPICE Passage of electrical noise and signals through linear systems. Statistical representation of random signals, electrical noise, and spectra. Digital modulation techniques, analysis of digital comm. systems in presence of noise; optimum principles, synchronization; equalization Design of data communication networks; modems, terminals. Error control, multiplexing, message switching, and data concentration. Introduction to basic queueing models; performance analysis of multiple access protocols; error control strategies. Physical layer, cellular concepts, multiple access control protocols. FEC and ARQ protocols, resource allocation and wireless standards Pictorial data representation, feature encoding; spatial filtering; image enhancement; image segmentation; object recognition; ... Optimum decision criteria; training algorithms; unsupervised learning; feature extraction; data reduction; syntactic pattern description; ... Physical principles of modern solid-state devices and their applications; quantum mechanics; fundamentals of nanoelectronics. Crystal structure, symmetry; carrier statistics; lattice dynamics; energy bands, equilib. prop. of semicond.; recombination-generation, trapping... Survey state-of-the-art microelectron. techn., prospects for future tech. Nanoscale MOSFETs, strained Si, high-K gates, carbon nanotubes, molecular electr. Intro. to VLSI circuit technology and manufacturing. Fabrication, device models, layout, parasitics, and simple gate circuits Requirements for RF ICs. Interdependence of RF circuit performance with devices, parasitics, packages and process technology Satellite, cellular systems, propagation, multiple access techniques, channel coding, speech/video coding; wireless computer networks. Analysis and design of digital filters for discrete signal processing; spectral analysis; fast Fourier transform. Finite-difference calculus; interpolation and extrapolation; roots of equations; solution of algebraic equations; eigenvalue problems; least-squares method...</p>
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**Notes:**

Each cohort provides a five-semester curriculum leading to an online MS degree.

Colors indicate breadth sequences.

Two breadth sequence pairs are required.

<p>EEL 6507 EEL 6502 EEL 6503 EEE 6382</p>	<p>Queueing Theory &amp; Data Comm. Adaptive Sig Proc Spread Spectrum Semicond Phys Electronics</p>	<p>Boykin Principe Yang Ural, Guo</p>	<p>Introduction to basic queueing models; performance analysis of multiple access protocols; error control strategies. Theory of adaptation with stationary signals; performance measures. LMS, RLS algorithms. Implementation issues and applications Techniques and applications; spreading sequence design; code division multiple access; multi-user detection Semiconductor device physics, equilib. and non-equil. processes; pn junctions; BJT operation, ...</p>
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