Electrical Engineering Elective Courses:

Option Courses Required	Schedule*
EEEE-221 Clean & Renewable energy Systems & Sources	Fall
EEEE-321 Energy Conversion	Fall
EEEE-485 Robotics Systems	Fall
EEEE-447 Introduction to Artificial Intelligence	Fall

Applied Electives-UGRD/GRAD Cross listed

EEEE-505/605 Modern Optics for Engineers	Spring
EEEE-510/610 Analog Electronics Design	Fall
EEEE-517/617 Microwave Circuits Design	Spring
EEEE-520/620 Design of Digital Systems	Fall/Spring
EEEE-521/621 Design of Computer Systems	Fall
EEEE-522/622 Electric Power Transmission & Distribution	Spring
EEEE-524-624 Advances in Power Systems	Spring
EEEE-529/629 Antenna Theory	Fall
EEEE-530-630 Biomedical Instrumentation	Spring
EEEE-531/631 Biomedical Sensors & Transducers I	Fall
EEEE-532/632 Fundamental Electrophysiology	Spring
EEEE-533/633 Biomedical Signal Processing	Spring
EEEE-536/636 Biorobotics/Cybernetics	Spring
EEEE-546/646 Power Electronics	Spring
EEEE-547/647 Artificial Intelligence Exploration	Fall
EEEE-579/679 Analog Filter Design	Fall
EEEE-583/683 Mechatronics	Fall
EEEE-585/685 Principles of Robotics	Fall
EEEE-587/787 MEMs Evaluation	Spring
EEEE-592/692 Communication Networks	Spring
EEEE-593/693 Digital Data Communication	Spring
EEEE-594/694 Sensor Array Processing for Wireless Comm.	Fall
EEEE-595/695 Optimization Methods for Engineers	Fall

Graduate Electives

EEEE-661 Modern Control Theory	Fall
EEEE-663 Real-Time Embedded Systems	Fall/Spring
EEEE-664 Performance Engineering of Real Time & Embedded Sys.	Fall/Spring
EEEE-670 Pattern Recognition	Spring
EEEE-678 Digital Signal Processing	Fall
EEEE-710 Advanced Electromagnetic Theory	Spring
EEEE-711 Advanced Carrier Injection Devices	Spring
EEEE-712 Advanced Field Effect Devices	Spring
EEEE-713 Solid State Physics	Fall
EEEE-715 Photonic Integrated Circuits	Spring
EEEE-718 Design & Characterization of Microwave Systems	Fall
EEEE-720 Advanced Topics in Digital Systems Design	Spring
EEEE-721 Advanced Topics in Computer Systems Design	Spring
EEEE-722 Complex Digital Sys. Veri.	Fall
EEEE-726 Mixed-Signal IC Design	Spring
EEEE-765 Optimal Control	Spring
EEEE-779 Digital Image Processing	Fall
EEEE-781 Image and Video Compression	Spring
EEEE-784 Advance Robotics	Spring
EEEE-794 Information Theory	Spring
EEEE-797 Wireless Communication	Spring
EEEE-798 Software Defined Digital Radio Communications	Spring

*subject to change

2.14 EE Graduate Course Offerings by Focus Area

Core Courses	Fall	Spring
Required Courses for all focus areas	EEEE-707 Engineering Analysis EEEE-709 Adv. Engineering Mathematics	EEEE-707 Engineering Analysis EEEE-709 Adv. Engineering Mathematics
Required Course for all Focus Areas except #3,5,6	EEEE-602 Random Signal and Noise	EEEE-602 Random Signal and Noise
Focus Area		
1 - Communication	EEEE 692 Communications Networks EEEE-629 Antenna Theory and Design EEEE-793 Error Detect/Error Correction	EEEE-693 Digital Data Communication. EEEE-694 Sensor Array Processing for Wireless Communications EEEE-794 Information Theory EEEE-797 Wireless Communication
2 - Control Systems	EEEE-661 Modern Control Theory EEEE-663 Real-Time Embedded Systems EEEE 683 Mechatronics	EEEE-664 Performance Engineering of Real-time & Embedded Systems EEEE-765 Optimal Control
3 - Digital Systems	EEEE-620 Design of Digital Systems EEEE-621 Design of Computer Systems EEEE 722 Complex Digital Systems Verification	EEEE-620 Design of Digital Systems EEEE-720 Advanced Topic in Digital Sys Design EEEE-721 Advanced Topics in Computer Sys Design
4-Electromagnetics, Microwaves and Antenna	EEEE-629 Antenna Theory & Design EEEE-718 Des & Characterization of Microwave Systems	EEEE-617 Microwave Circuit Design EEEE-710 Advanced Electromagnetic Theory EEEE-693 Digital Data Communication EEEE-797 Wireless Communication
5- Integrated Electronics	EEEE-610 Analog Electronics EEEE-711 Advanced Carrier-Injection Devices EEEE-713 Solid State Physics MCEE-601 Micro Fabrication	EEEE-712 Advanced Field Effect Devices EEEE-726 Mixed Signal IC Design MCEE-732 CMOS Mfg.
6-MEMS	EEEE-661 Modern Control Theory EEEE-689 Fundamentals of MEMs MCEE-601 Micro Fabrication MCEE-770 MEMs Fab EEEE-622 Electric Power Transmission & Distribution **(Elective)**	EEEE-646 Power Electronics EEEE-787 MEMs Evaluations EEEE-624 Advances in Power Systems **(Elective)** EEEE-631 Biomed Sensors & Transducers I **(Elective)**
7- Robotics	EEEE-685 Principles of Robotics EEEE-647 Artificial Intelligence EEEE-661 Modern Control Theory	EEEE-636 Bio-robotics/ Cybernetics EEEE-784 Advanced Robotics
8- Signal & Image Processing	EEEE-678 Digital Signal Processing EEEE-695 Optimization Methods for Engineers EEEE-779 Digital Image Processing	EEEE-670 Pattern Recognition EEEE-694 Sensor Array Processing for Wireless Communications EEEE-781 Image and Video CompressionEEEE-794 Information Theory

- A selected number of Graduate courses are usually available during the summer semester.
- Graduate level courses taken in Microelectronic Engineering, Computer Engineering or Mechanical Engineering can be counted towards the 3-course requirement in the Controls, Digital Systems, Integrated Electronics or MEMs focus areas.
- Related area courses may be taken from the College of Engineering, the Center for Imaging Science and the Computer Science Department