

MASTER OF SCIENCE IN ELECTRICAL ENGINEERING (MSEE)

GENERAL STUDIES TRACK* OPTIONS

Curriculum Program of Study

Name		USF ID #	
Term/Year Admitted			
Address			
Phone			
Email			
Advisor			

Course Title	Number	Credits	Semester	Grade
1. Mathematics: 6 hours				
Linear and Matrix Algebra	EEL 6935	3		
Numerical Methods and Partial Differential Equations	EEL 6935	3		
Optimization Methods	EEL 6935	3		
Statistical Inference	EEL 6936	3		
Random Processes	EEE 6545	3		
Engineering Apps for Vector Analysis **	EEL 6027	3		
Engineering Apps for Partial Diff. Eq. **	EEL 6023	3		
Engineering Apps for Complex Analysis **	EEL 6022	3		
2. Sequence Courses: 12 hours (2 sets of sequences)				
Biomedical				
Bioelectricity	EEL 6936	3		
Bioelectronics	EEE 6277	3		
Biomedical Systems and Pattern Recognition	EEE 6282	3		
Biomedical Image Processing	EEE 6514	3		
Biomedical Optical Spectroscopy and Imaging	EEE 6217	3		
Biomedical Engineering	BME 6000	3		
MEMS I/Chem BioSensors	EEE 6276	3		
System on a Chip	EEE 6412	3		
Communications and Networking				
Digital Communication Systems	EEL 6534	3		
Mobile and Personal Communication	EEL 6593	3		
Broadband Communication Networks	EEL 6506	3		
Wireless Network Architectures and Protocols	EEL 6597	3		
Wireless Communications Lab	EEL 6592	3		
Signal Processing				
Digital Signal Processing I	EEE 6502	3		
Digital Signal Processing II	EEL 6752	3		
Speech Signal Processing	EEL 6586	3		
Deep Learning	EEL 6935	3		
Real-Time DSP Systems Lab (DSP/FPGA Lab)	EEL 6722C	3		
Control Theory				
1) Digital Control Theory	EEL 5631	3		
Systems & Control Theory I	EEL 6614	3		
2) Introduction to VHDL	EEL 6727	3		
Rapid System Prototyping	EEL 6729	3		
3) Multivariable Control Systems	EEL 6935	3		
Stochastic Estimation and Control	EEL 6936	3		
4) Embedded Systems	EEL 6935	3		
Systems & Control Theory I	EEL 6614	3		
5) Digital Signal Processing I	EEE 6502	3		
Digital Signal Processing II	EEL 6752	3		
Energy / Power				

1) Power Systems Analysis and Power Systems II or Energy Delivery Systems	EEL 6250 EEL 6256 EEL 6285	3 3 3		
2) Power Electronics and Electric Machines and Drives	EEL 6245 EEL 6227	3 3		
3) Electrical Distribution Systems and Energy Delivery Systems	EEL 6936 EEL 6285	3 3		
4) Design Energy Efficiency & Solar Power and Design of Solar Power Plants	EEL 6935 EEL 6936	3 3		
Microelectronics				
Physical Basis of Microelectronics	EEL 5382	3		
Integrated Circuit Technology	EEE 5356	3		
Integrated Systems Technologies	EEE 6357	3		
Semiconductor Device Theory I	EEL 6353	3		
Semiconductor Device Theory II	EEL 6354	3		
MEMS I/Chem Bio Sensors	EEE 6276	3		
MEMS II	EEE 6278	3		
Systems				
Broadband Networks	EEL 6506	3		
Data Networks, Systems and Security	EEL 6935	3		
Wireless Network Architectures and Protocols	EEL 6597	3		
Network Science	EEL 6935	3		
Deep Learning	EEL 6935	3		
Robotics and AI	EEL 6935	3		
Security				
Data Networks, Systems and Security	EEL 6935	3		
Cryptography and Data Security	EEL 6935	3		
Emerging Topics in Cyber Security	EEL 6935	3		
Wireless Mobile Computing and Security	EEL 6935	3		
Data Analytics				
Data Analytics for Electrical and Systems Engineers	EEL 6935	3		
Advanced Data Analytics	EEL 6935	3		
Network Science	EEL 6935	3		
Wireless Circuits				
Wireless Circuits and Systems Laboratory	EEL 5936	3		
RF/Microwave Circuits I	EEL 6426	3		
RF/Microwave Circuits 2	EEL 6427	3		
MMIC Design	EEE 6430	3		
RF/MW Power Amp Design	EEE 6428	3		
RF & Microwave Measurements	EEL 6425	3		
Wireless Systems				
Digital Communication Systems	EEL 6534	3		
Mobile and Personal Communication	EEL 6593	3		
Wireless Network Architecture	EEL 6597	3		
Wireless Communications System Laboratory	EEL 6936	3		
Antenna and EM				
Electromagnetic Field Theory	EEL 6486C	3		
Antenna Theory	EEL 5462	3		
Advanced Antenna Theory	EEL 6463	3		
Numerical Tech. in Electromagnetism	EEL 6481C	3		
MEMS and Microsystems				
MEMS I	EEE 6276	3		
MEMS II	EEE 6278	3		

3. Electives: 6 hours				
4. Thesis/Coursework Options:				
Thesis Option: 6 hours	EEL 6971	6		
Non-Thesis Option: 6 hours of project, additional electives or independent study		6		
*Tracks are for student benefit only. They will not show on transcripts or diplomas. **This course is no longer offered but will be recognized for credit if previously taken.			Total Credits Outside EE	
			Total Credits Independent Study	
			30	Total Credits (30 required)