

MASTER OF SCIENCE IN ELECTRICAL ENGINEERING

RENEWABLE ENERGY AND POWER SYSTEMS



Today is a new age of electrification. We use solar energy and wind energy to generate electricity. We use electric cars for transportation. And we use phone apps to adjust electricity demands at our homes responding to electricity prices. At the University of South Florida, you will learn the enabling technologies that facilitate solar and wind grid integration, motor drive control for electric vehicles, and power grid computing that facilitates power market transactions. Your scientific computing skills as well as hardware handling skills will be greatly enhanced for a professional career in power and energy.



Dr. Zhixin Miao
Advisor
Associate Professor

Research

Power Electronics, Power System Protection, Electromagnetic Transient Simulation, Hardware



Dr. Elias Stefanakos
Professor

Research

Materials, Renewable Energy Sources and Systems, Hydrogen and Fuel Cells, and Electric and Hybrid Vehicles

Dr. Lingling Fan
Professor

Research

Power System Computing, Control and Dynamics, Optimization



Dr. Mahshid Rahnamay Naeini
Assistant Professor

Research

Network Science, Stochastic Process, Machine Learning, Cyber-Physical-Human Systems with Particular Emphasis on Smart Grids

Dr. Rudy Schlaf
Professor

Research

Spray-Based Deposition of Macro-Molecular Thin Films and Interfaces, Thin Film Photovoltaics, Sustainable Energy



MASTER OF SCIENCE IN ELECTRICAL ENGINEERING (MSEE) RENEWABLE ENERGY AND POWER SYSTEMS TRACK* OPTIONS

Curriculum Program of Study Advisor Dr. Zhixin Miao

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

Course Title	Number	Credits	Semester	Grade
1. Core: 4 hours (both required)				
Linear and Matrix Algebra	EEL 6029	2		
Random Processes in Electrical Engineering	EEE 6542	2		
2. Concentration Requirements: 14 hours				
a- Track Math (1 required)				
Applied Optimization	EEL 6020	2		
Statistical Inference	EEL 6029	2		
b- Track Core (4 required)				
Power Systems Analysis	EEL 5250	3		
Power Electronics	EEL 6245	3		
Electric Machines and Drives	EEL 6227	3		
Energy Delivery Systems	EEL 6285	3		
Power System Protection	EEL 6935	3		
Design Energy Efficiency & Solar Power	EEL 6935	3		
Design of Solar Power Plants	EEL 6936	3		
3. Electives**: 3-6 hours (Thesis/Non-Thesis) *if not already selected as a track core				
Power Systems Analysis *	EEL 5250	3		
Power Electronics *	EEL 6245	3		
Electric Machines and Drives *	EEL 6227	3		
Energy Delivery Systems *	EEL 6285	3		
Power System Protection *	EEL 6935	3		
Design Energy Efficiency & Solar Power *	EEL 6935	3		
Design of Solar Power Plants *	EEL 6936	3		
Digital Control Theory	EEL 5631	3		
Stochastic Estimation and Control	EEL 6936	3		
Multivariable Control Systems	EEL 6935	3		
Embedded Systems	EEL 6935	3		
4. Thesis/Coursework Options:				
Thesis Option: 6-9 hours				
Non-Thesis Option: combined total of 6 hours of <i>additional electives</i> , independent study, internship, project, or out of department.				
*Tracks are for student benefit only. They will not show on transcripts or diplomas.			Total Credits Outside of Dept.	
			Total Credits Independent Study	
			Total Credits (30 required)	