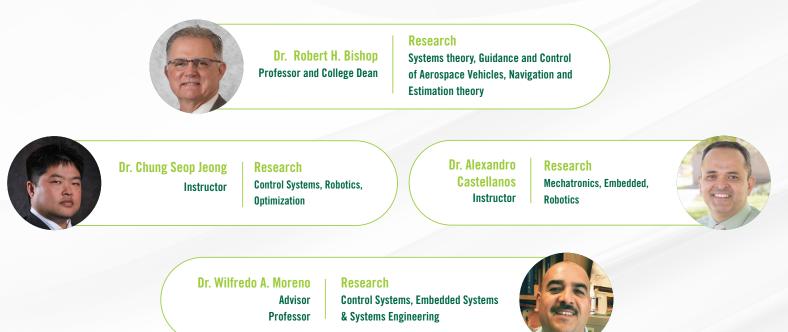# UNIVERSITY of SOUTH FLORIDA

MASTER OF SCIENCE IN ELECTRICAL ENGINEERING
AUTOMATION AND CONTROL SYSTEMS

The Applied Technologies for Automation & Control Systems (ATACS) graduate track has been designed to offer graduate students the opportunity to acquire and apply the necessary fundamental knowledge and the skill set complemented with experiential learning - "Industry-driven applied research" in order to enhance their professional engineering careers in design, development, integration and test of enabling technologies with societal impact in areas such as Industrial Automation & Control, Energy Generation & Management, Robotics, Biomedical, Smart Cities, Cyber-physical Systems, Internet of Everything (IoE), Autonomous Vehicles, Agriculture, Advanced Manufacturing, and Consumer's Electronics among others. The ATACS track designed curriculum includes courses in Control Systems, Mechatronics, Embedded Systems, Artificial Intelligence (AI) and tailored technical electives to effectively participate and contribute in cross-disciplinary employment opportunities as an Electrical Engineer.

Dr. Robert H. Bishop
Professor and College Dean

Research
Systems theory, Guidance and Control of Aerospace Vehicles, Navigation and Estimation theory

Dr. Chung Seop Jeong
Instructor

Research
Control Systems, Robotics, Optimization

Dr. Alexandro Castellanos
Instructor

Research
Mechatronics, Embedded, Robotics

Dr. Wilfredo A. Moreno
Advisor
Professor

Research
Control Systems, Embedded Systems & Systems Engineering

MASTER OF SCIENCE IN ELECTRICAL ENGINEERING (MSEE)
AUTOMATION AND CONTROL SYSTEMS TRACK* OPTIONS

Curriculum Program of Study Advisor Dr. Wilfredo Moreno

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		
b- Track Core (4 required)				
Digital Control Theory	EEL 5631	3		
Optimal Control	EEL 6935	3		
Nonlinear Control Systems	EEL 6936	3		
Systems & Control Theory	EEL 6614	3		
Agile Systems of Systems Engineering & Modeling	EEL 6935	3		
Embedded Systems	EEL 6936	3		
Applied Robotics	EEL 6935	3		
Introduction to VHDL	EEL 6727	3		
Rapid Systems Prototyping	EEL 6729	3		
Multivariable Control Systems	EEL 6935	3		
Stochastic Estimation and Control	EEL 6936	3		
AI Robotics	EEL 6936	3		
3. Electives: 3-6 hours (Thesis/Non-Thesis)**				
DSP I	EEL 6502	3		
DSP II	EEL 6752	3		
Deep Learning	EEL 6586	3		
Bioelectricity	EEL 6935	3		
Power Electronics	EEL 6935	3		
MEMS I/Chem BioSensors	EEL 6935	3		
4. Thesis/Coursework Options:				
Thesis Option: 6-9 hours				
Non-Thesis Option: combined total of 6 hours of *additional electives,* 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)	