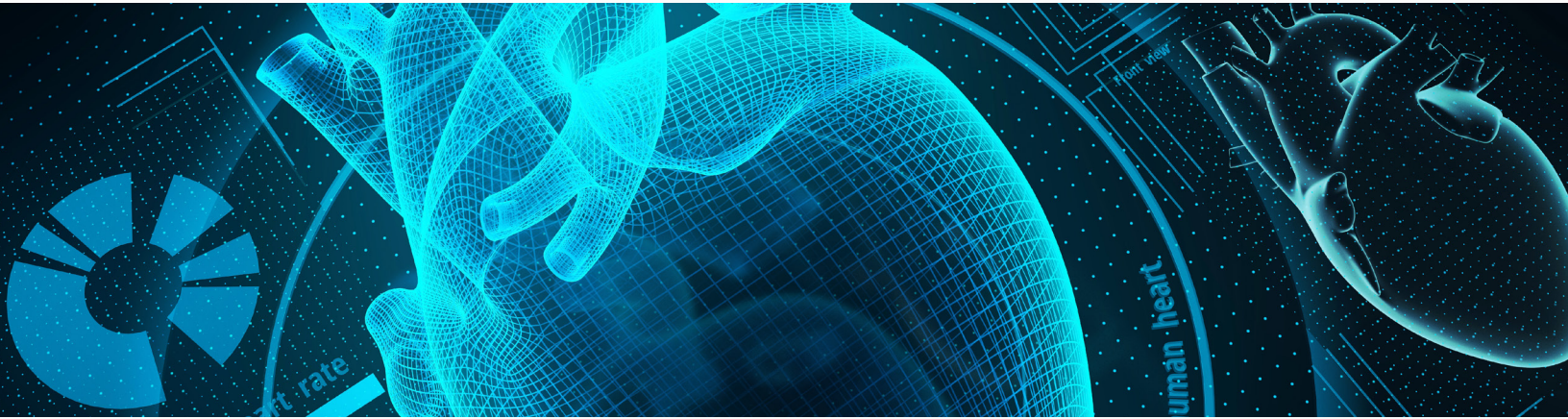


MASTER OF SCIENCE IN ELECTRICAL ENGINEERING

BIOMEDICAL SYSTEMS



Welcome to the perennially important area of Biomedical Systems which is the underpinning of many medical advances: Bioelectricity, Bioelectronics, Biomedical optical spectroscopy, bio-MEMS, Biomedical imaging, including CT/PET fusion, Biomedical instrumentation – ranging from micro electrodes for heart monitoring to brain monitoring, neural interfaces, wearables, DNA and RNA models, Analysis of medical data using ROC concepts, remote patient analysis, Glucose-insulin models, gene delivery, blood flow imaging, transducers, RF acoustics, and the list goes on. Join our graduate program to learn and participate in the cutting-edge research of our faculty. Their graduates have attained top positions in industry, government, and academia, nationwide.



Dr. Andrew Hoff
Professor,
Graduate Program Director,
Senior Member IEEE

Research
E-Field Gene Delivery,
Plasma, Corona Ions,
Metrology.



Dr. Vijay Jain
Co-Advisor
Distinguished Professor
Senior Member IEEE

Research
Biomedical Image Processing,
Biomedical Systems and PR,
System on a Chip

**Dr. Ashwin
Parthasarathy**
Assistant Professor

Research
Bio-optical Spectroscopy,
Biomedical Optical Devices,
Blood Flow Imaging, Wearables



Dr. Stephen Saddow
Professor
Co-Advisor
Senior Member IEEE

Research
Bioelectronics, Neural
Interfaces, MRI Compatibility,
SiC Nanotechnology



Dr. Jing Wang
Agere Systems
Endowed Chair Professor
Senior Member IEEE

Research
Bio-MEMS, Transducers, RF acoustics,
Nanomaterials, RF Additive Manufacturing,
RF/mmW Systems, MMICs

MASTER OF SCIENCE IN ELECTRICAL ENGINEERING (MSEE) BIOMEDICAL SYSTEMS TRACK* OPTIONS

Curriculum Program of Study co-Advisors Dr. V. K. Jain and Dr. S. Sadow

Name		USF ID #			
Term/Year Admitted					
Address					
Phone					
Email					
Advisor					
Course Title	Number	Credits	Semester	Grade	
1. Core (Mathematics): 4 hours					
Linear and Matrix Algebra	EEL 6029	2			
Random Processes in Electrical Engineering	EEL 6542	2			
2a. Concentration: One more mathematics course 2 hours; select one, and only one					
Engineering Apps of Partial Differential Equations	EEL 6023	2			
Applied Optimization	EEL 6020	2			
Statistical Inference	EEL 6029	2			
2b. Concentration: BMS specialization, 12 hours (choose any four courses)					
Bioelectricity	EEL 6935	3			
Bioelectronics (Prerequisite: Bioelectricity)	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			
2c. Concentration: BMS Electives**: 6 hours (choose two courses if taking 6 hours of thesis or opting for non-thesis) or 3 hours (choose one course) if taking 9 hours of thesis					
Analog CMOS/VLSI Design	EEL 6357	3			
Intro to Bioengineering	EEL 6935	3			
Biomolecular Systems	EEL 6936	3			
Electromagnetic Field Theory	EEL 6486C	3			
Integrated Circuit Technology	EEE 5356	3			
Mobile and Personal Communication	EEL 6593	3			
Advanced Fluid Mechanics	EML 6713	3			
Modern Biomedical Technologies	BME 6055	3			
Basic Medical Anatomy	GMS 6605	3			
Medical Histology	GMS 6630	3			
3. Thesis/Coursework Options:					
Thesis Option: 6 or 9 hours	EEL 6971	6 or 9			
Non-Thesis Option: 6 hours of project, additional electives, independent study, or internship, or a combination thereof. Note that outside credits, internship, independent study, etc., has a limit of 6 credits combined.		6			
*Tracks are for student benefit only. They will not show on transcripts or diplomas. **Courses listed under 2b can also be taken as electives beyond the four chosen for the BMS specialization.				Total Credits Outside EE	
				Total Credits Independent Study	
				Total Credits (30 required)	