

MASTER OF SCIENCE: BIOMEDICAL ENGINEERING

Student Learning Outcomes

Students graduating from this program will:

- formulate solutions to complex biomedical engineering problems;
- employ advanced mathematical, statistical, and programming skills;
- demonstrate enhanced written, graphical, and/or oral technical communication skills.

Coursework Masters: 21 Elective Credits

Thesis Masters: 15 Elective Credits + 6 Thesis Credits

Code	Title	Credits
Required Coursework		
E&C-ENGR 380	Signals and Systems	3
MEC-ENGR 406	Introduction to Biomaterials	3
or MEC-ENGR 5506	Introduction to Biomaterials	
Please choose one of the following:		3
BIOLOGY 404	Biostatistics 2	
COMP-SCI 5565	Introduction to Statistical Learning	
or COMP-SCI 465R	Introduction to Statistical Learning	
MEDB 5501	Applied Biostatistics I	
Electives: Minimum of 9 Engineering Credits & Minimum of 6 Biology/Medical/Science Credits		21
BIOLOGY 5516	Global Health: New and Emerging Infections Diseases	
BIOLOGY 5517	From Bench to Bedside: Translational Research	
BIOLOGY 5525	Bioinformatics and Data Analysis	
BIOLOGY 5539	Mammalian Physiology	
LS-CBB 5504	Graduate Virology	
LS-MBB 5509	Graduate Developmental Biology	
MEDB 5502	Applied Biostatistics II	
MEDB 5514	Human Genome Epidemiology	
MEDB 5520	Introduction to Medical Informatics	
MEDB 5521	Clinical Bioinformatics	
MEDB 5535	Quantitative Aspects of Epidemiologic Research	
MEDB 5560	Medical Decision Making	
MEDB 5561	Responsible Conduct of Research	
COMP-SCI 5566	Introduction to Bioinformatics	
COMP-SCI 5567	Deep Learning	
BIO-SCI 5710	Genetics and Biochemistry of Cranial Facial Biology	
BIO-SCI 5760	Physiology of Oral Mineralized Tissues	
CIV-ENGR 5622	Theory of Elasticity	
E&C-ENGR 5582	Computer Vision	
E&C-ENGR 5580	Digital Signal Processing	
E&C-ENGR 5584	Advanced Digital Image Processing	
E&C-ENGR 5586	Pattern Recognition	
E&C-ENGR 5647	Emerging Interdisciplinary Research in Nanotechnology	
E&C-ENGR 5541	Nanoelectromagnetics and Plasmonics	
MEC-ENGR 5511	Introduction to Biomechanics	
MEC-ENGR 5512	Biodynamics	
MEC-ENGR 5513	Experimental Biomechanics of Human Motion	
MEC-ENGR 5516	Biomedical Device Design	
MEC-ENGR 5507	Advanced Dynamics and Modeling	

MEC-ENGR 5557	Mechatronics System Design	
Total Credits		30