

 FLORIDA ATLANTIC UNIVERSITY	NEW/CHANGE PROGRAM REQUEST Graduate Programs		UGPC Approval _____ UFS Approval _____ Banner _____ Catalog _____
	Department Biomedical Engineering College Engineering and Computer Science		
Program Name MS in Biomedical Engineering		<input type="checkbox"/> New Program* <input checked="" type="checkbox"/> Change Program*	Effective Date (TERM & YEAR) Spring 2025
<p>Please explain the requested change(s) and offer rationale below or on an attachment.</p> <p>There is a need to make the master program's core broader to accommodate students from a wider range of academic backgrounds. Therefore, core courses requirements and technical electives are modified to that need. There are also new courses added to the new department of biomedical engineering to enrich students experience in the BME graduate program.</p>			
<p><small>*All new programs and changes to existing programs must be accompanied by a catalog entry showing the new or proposed changes.</small></p>			
Faculty Contact/Email/Phone Mahsa Ranji/mranji@fau.edu/561-297-0089		Consult and list departments that may be affected by the change(s) and attach documentation NA.	
Approved by Department Chair  College Curriculum Chair Francisco Presuel-Moreno College Dean  UGPC Chair _____ UGC Chair _____ Graduate College Dean _____ UFS President _____ Provost _____		Date  9/23/24 9/21/24 _____ _____ _____ _____ _____	

Email this form and attachments to UGPC@fau.edu 10 days before the UGPC meeting.

MS IN BIOMEDICAL ENGINEERING

DEGREE REQUIREMENTS

Prospective students should consult the university catalog with respect to prerequisite requirements, admission requirements, admission to candidacy requirements and deficiency requirements. The Master of Science in Biomedical Engineering (MSBioMedE) degree is awarded to students who:

1. Meet all University general degree requirements (see the university catalog).
2. Satisfy the specific degree requirements of the Department of Computer and Electrical Engineering and Computer Science.
3. MS Worksheet (pdf)

MSBioMedE Thesis Option (30 credits)

1. Requires six credits of orally defended thesis. The MS committee is chaired by the student's thesis advisor. The chair of the committee must be a graduate faculty member from any department within the College of Engineering and Computer Science.
 2. Requires 24 credits of approved course work of which ~~nine~~ 12 credits are program core courses and the remaining ~~15~~ 9 credits are approved elective courses ~~offered by the Colleges of Engineering and Computer Science, Charles E. Schmidt College of Science, and Christine E. Lynn College of Nursing listed in MS worksheet.~~
- 2.3. Every thesis student must take CGS 5937/Graduate Seminar/ A seminar series with distinguished speakers. Students must attend at least five seminar presentations. (Grading: S/U, 0 credits.)

Note: A maximum of 3 credits of directed independent study may be applied toward the master's degree.

MSBioMedE Non-Thesis Option (30 credits)

1. Requires 30 credits of approved course work of which 9~~12~~ credits are program core courses and the remaining ~~21~~18 credits are approved elective courses ~~offered by the Colleges of Engineering and Computer Science, Charles E. Schmidt College of Science, and Christine E. Lynn College of Nursing listed in MS worksheet.~~
2. Every non-thesis student must take CGS 5937/Graduate Seminar/ A seminar series with distinguished speakers. Students must attend at least five seminar presentations. (Grading: S/U, 0 credits.)

Note: A maximum of 3 credits of directed independent study may be applied toward the master's degree.

SUBMISSION OF PLAN OF STUDY

Graduate students are required to submit a Plan of Study when they have completed between 9 and 15 credits of coursework with a minimum cumulative GPA of 3.0. A student may not register for thesis credits prior to submitting a Plan of Study.

PROGRAM CORE COURSES (12 CREDITS, 4 COURSES OUT OF 8*)

BME 5313 Biomedical engineering Cell Biology and Physiology (3)

CAP 5768 Introduction to Data Science or STA 5195, Introduction to Biostatistics

BME 5052L Biomedical Engineering Lab (3) or Microfabrication LAB

BME 5537 Bioimaging (3)

BME 6105 Biomaterials (3)

BME 5937 Bio-signal Processing (3)

BME 5742 Biosystems Modeling and Control (3)

BME 6858 BioMEMS (3)

*: *: All these courses are part of technical elective group A as well. If four courses are taken as the core, the other four can be taken as technical electives. Please refer to worksheet for technical elective courses.

~~1. BME 5000 Introduction to Biomedical Engineering (3)~~

~~Course provides a broad perspective of biomedical engineering as applied to topics in contemporary biology, physiology, and medicine, including biotechnology and bioinformatics. A comprehensive final research paper is required of students in this course. The course is designed for graduate students and may be taken by senior undergraduates with permission of the instructor.~~

~~2. BME 5742 Biosystems Modeling and Control (3)~~

~~This course covers population growth, enzyme kinetics, heart and blood circulation, lung model, Hodgkin-Huxley nerve model, dynamic simulations, compartmental models, and drug delivery. The course is designed for graduate students and may be taken by senior undergraduates with permission of the instructor.~~

~~3. BME 6762 Bioinformatics: Biomedical Perspectives (3)~~

~~Introduction to bioinformatics -- Bioinformatics definition and applications. Concepts and definitions of molecular biological terms: Genomics and Proteomics. Biological sequence analysis and Next-generation sequencing. Translational and clinical bioinformatics. Viral bioinformatics and rational vaccine~~

~~designs. Cytogenetic and phylogenetic informatics. Sequence search/analyses tools and protocols. Information resources: Databases and networks. Prior to registering for this course, it is recommended that students take PCB 3063, Genetics, or equivalent, or obtain permission from the instructor.~~

~~4. **BSC 6936 Advanced Biotechnology Lab (3)**~~

~~DEFICIENCY REQUIREMENTS (NOT COUNTED IN THE TOTAL PROGRAM CREDITS)~~

- ~~1. PCB 3063 Genetics~~
- ~~2. COP 2220 Introduction to Programming in C~~