FLORIDA ATLANTIC UNIVERSITY

NEW/CHANGE PROGRAM REQUEST
Undergraduate Programs

UUPC Approval 9-14-2026
UFS Approval _____
Banner _____
Catalog _____

Department Biomedical Engineering

College COECS

Program Name
Biomedical Engineering

☐ **New Program***
☑ **Change Program***

Effective Date
(TERM & YEAR)
Spring/2027

Please explain the requested change(s) and offer rationale below or on an attachment.

The following changes have been made in the department catalog.

- Removed/added core courses in three different track programs
- Corrected courses and corresponding credit hours

*All new programs and changes to existing programs must be accompanied by a catalog entry showing the new or proposed changes.

Faculty Contact/Email/Phone
Javad Hashemi / jhashemi@fau.edu / 561) 297-3438

Consult and list departments that may be affected by the change(s) and attach documentation

Approved by	***Date***
Department Chair Javad Hashemi	8/12/2026
College Curriculum Chair	8/31/26
College Dean	8/20/26
UUPC Chair Korey Sorge	9-14-2026
Undergraduate Studies Dean Dan Meeroff	9-14-2026
UFS President	
Provost	

Email this form and attachments to mjenning@fau.edu seven business days before the UUPC meeting.

Biomedical Engineering
Bachelor of Science

(Minimum of 120 credits required)

The Bachelor of Science in Biomedical Engineering (B.S.B.M.E.) degree program reflects the breadth of the profession. The curriculum includes coursework in basic science and mathematics, engineering sciences and engineering systems and materials. Students gain a strong interdisciplinary foundation while exploring specialized topics in three areas of focus.

- Biomaterials
- Biorobotics
- Smart Health Systems

Graduates of the B.S.B.M.E. program are prepared for careers in medical device design, diagnostics, prosthetics and biotechnology, as well as roles in healthcare, government and consulting. The program also serves as an excellent foundation for advanced study in graduate programs, including Master's and Ph.D. degrees in engineering or science disciplines, or for pre-medical tracks leading to medical school.

Biomedical Engineering Educational Objectives and Student Outcomes
The Biomedical Engineering program strongly supports the educational objectives and learning outcomes of the College of Engineering and Computer Science (see the Educational Objectives and Expected Student Learning Outcomes subsections previously listed in this section).

Program Educational Objectives are broad statements that describe the expected accomplishments and professional status of Biomedical Engineering graduates a few years beyond the baccalaureate degree.

The Biomedical Engineering program at Florida Atlantic University is dedicated to graduating engineers who, within a few years after graduation will:

1. Practice biomedical engineering within the general areas of biomaterials and tissue engineering, bio-robotics and smart health systems in the organizations that employ them;
2. Advance their knowledge of biomedical engineering, both formally and informally, by engaging in lifelong learning experiences, including attainment of professional licensure and/or graduate studies;
3. Serve as effective professionals based on strong interpersonal and teamwork skills, an understanding of professional and ethical responsibility and a willingness to take the initiative and seek progressive responsibilities; and

4. Participate as leaders in activities that support service to, and/or economic development of, the community.

The educational objectives of the Bachelor of Science in Biomedical Engineering program are achieved by ensuring that graduates have the following characteristics or student outcomes:

1. An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics;
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors;
3. An ability to communicate effectively with a range of audiences;
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts;
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives;
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data and use engineering judgment to draw conclusions; and
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Admission Requirements

All students must meet the minimum admission requirements of the university. Please refer to the Admissions section of this catalog. All students must meet the preprofessional requirements listed above to be accepted into the B.S.B.M.E. program as discussed under General Requirements for admission to the college.

Prerequisite Coursework for Transfer Students

Students transferring to Florida Atlantic University must complete both lower-division requirements (including the requirements of the General Education Curriculum) and the college and major requirements. Lower-division requirements may be completed through the A.A. degree from any Florida public college, university or community college or through equivalent coursework at another regionally accredited institution. Before transferring and to ensure timely progress toward the baccalaureate degree, students must also complete the prerequisite courses for their major as outlined in the *Transition Guides* and below.

All courses not approved by the Florida Statewide Course Numbering System that will be used to satisfy requirements will be evaluated individually on the basis of content and will require a catalog course description and a copy of the syllabus for assessment.

Degree Requirements

The Bachelor of Science in Biomedical Engineering degree will be awarded to students who:

1. Meet all general degree requirements of the university.
2. Complete the curriculum for the B.S. in Biomedical Engineering degree (see below).

Curriculum

The Bachelor of Science in Biomedical Engineering degree requires 120 credits. For credit toward the degree, a grade of "C" or better must be received in each course listed. In addition, all prerequisites for each mathematics, science or engineering course must be completed with a grade of "C" or better before enrollment is permitted. The degree components are listed below.

Courses for All Areas of Focus

Course Title	Course Number	Credits
Communication / Humanities / Social Science General Education Curriculum		
College Writing 1 (2, 3)	ENC 1101	3
College Writing 2 (2, 3)	ENC 1102	3
Social Science Courses, General Education Curriculum		6
Humanities Courses, General Education Curriculum		6
Engineering Design		
RI: Engineering Design 1 (5)	EGN 4950C	3 or
RI: Engineering Design	EML 4521C	3
RI: Engineering Design 2	EGN 4952C	3 or
RI: Design Project	EML 4551	3
Engineering Topics		
Methods in Biomedical Engineering Research	BME 4070C	3
Orthopedic Biomechanics	BME 4201	3
Biomedical Instrumentation and Measurements	BME 4503C	3
Introduction to Programming in Python	COP 3035C	3
Circuits	EEL 3111	3
Engineering Graphics	EGN 1111C	3
Fundamentals of Engineering	EGN 1002	3
Statics	EGN 3311	3
~~Dynamics~~	~~EGN 3321~~	~~3~~

Mathematics		
Calculus with Analytic Geometry 1 (1, 4)	MAC 2311	4
Calculus with Analytic Geometry 2 (1, 4)	MAC 2312	4
Differential Equations 1 or Engineering Math 1	MAP 2302 or MAP 3305	3
Natural Science, General Education Curriculum		
Bioprinciples	BSC 1010	3
Bioprinciples Lab	BSC 1010L	1
Anatomy and Physiology 1	BSC 2085	3
Anatomy and Physiology 1	BSC 2085L	1
General Chemistry 1	CHM 2045	3 and
General Chemistry 1 Lab	CHM 2045L	1
Genetics	PCB 3063	4
General Physics for Engineers 1	PHY 2048	3 and
General Physics 1 Laboratory	PHY 2048L	1
BME Common Core Total Credits		79

Courses for Biomaterials Focus		
Course Title	**Course Number**	**Credits**
Engineering Topics		
Biomaterials	BME 4100	3
Tissue Engineering: Basic Concepts	BME 4332	3
Strength of Materials	EGN 3331	3

Mathematics and Science		
Biochemistry 1	BCH 3033	3
Biodiversity	BSC 1011	3
Biodiversity Lab	BSC 1011L	1
General Chemistry 2	CHM 2046	3
General Chemistry 2 Lab	CHM 2046L	1
Organic Chemistry 1	CHM 2210	3
Organic Chemistry 2	CHM 2211	3
Organic Chemistry 2 Lab	CHM 2211L	2
General Microbiology	MCB 3020	3
General Microbiology Lab	MCB 3020L	1
Introduction to Biostatistics	STA 3173	3
Technical Electives		
BME Technical Electives	BME XXXX	6
Biomaterials Focus Total Credits		41

Courses for Biorobotics Focus		
Course Title	Course Number	Credits

Engineering Topics		
Applied Robotics	BME 4276C	3
Neuromechanics	BME 4363	3
Introduction to Biosignal Processing	BME 4509	3
Signals and Digital Filter Design	EEL 3502	3
Controls	EEL 4652C	3
Dynamics	EGN 3321	3
Strength of Materials	EGN 3331	3
Fluid Mechanics	EML 3701	3
Introduction to Robotics	EML 4800	3
Mathematics and Science		
General Physics 2	PHY 2049	4
General Physics 2 Laboratory	PHY 2049L	1
Technical Electives		
BME Technical Electives	BME XXXX	9
Biorobotics Focus Credit Total		41

Courses for Smart Health Systems Focus

Course Title	Course Number	Credits
Engineering Topics		
Biomaterials	BME 4100	3
Introduction to Biosignal Processing	BME 4509	3
Introduction to Bioimaging	BME 4536	3
Microfabrication Technology	BME 4583C	3
Signals and Digital Filter Design	EEL 3502	3
Dynamics	EGN 3321	3
Fluid Mechanics	EML 3701	3
Mathematics and Science		
General Chemistry 2	CHM 2046	3
General Chemistry 2 Lab	CHM 2046L	1
Quantitative Analysis	CHM 3120	2
Quantitative Analysis Lab	CHM 3120L	2
Biostatistics	STA 3173	3
~~General Physics 2~~ Physics for Engineers 2	~~PHY 2049~~ PHY 2044	3
Technical Electives		
BME Technical Electives	BME XXXX	~~5~~ 6
Smart Health Focus Credit Total		41

Notes:

1. Contributes to the university core curriculum.
2. Contributes to Writing Across Curriculum (College-Level Communication Skills, formerly Gordon Rule) writing.

3. General Education Curriculum courses, totaling 6 credits, must be selected to satisfy Writing Across Curriculum (College-Level Communication Skills, formerly Gordon Rule) requirement.
4. Contributes to College-Level Computation Skills (formerly Gordon Rule) requirement.
5. PHY 2048, General Physics for Engineers 1 (4 credits) is an acceptable substitute, but only 3 credits will apply toward the degree.
6. Students who enter with a B.S. degree or more than 60 completed credits and who have not taken EGN 1002, may substitute an approved upper-level biomedical engineering technical elective for EGN 1002.

Internships

Biomedical Engineering students are strongly encouraged to gain practical experience through participation in internship opportunities. However, internships require prior approval from the department and coordination with the Career (IDS 3949 : Professional Internship) ~~3941, Engineering Professional Internship)~~. For more information, contact the FAU Career Center at 561-297-3533 or visit https://www.fau.edu/engineering/case/career/.