

Joint BS in Biomedical Engineering/MS in Bioinformatics

To earn a joint Bachelor of Science in Biomedical Engineering/ Master of Science in Bioinformatics degree from UIC, students must complete university, college, and department degree requirements. The Department of Biomedical Engineering degree requirements are outlined below. Students should consult the College of Engineering section for additional degree requirements and college academic policies.

The joint Bachelor of Science in Biomedical Engineering (BSBME) and Master of Science in Bioinformatics (MSBIOI) degrees are designed for undergraduates with outstanding academic performance who desire to pursue graduate studies in biomedical engineering, or who wish to prepare themselves for advanced placement in the workplace. Students will earn both a BSBME and MSBIOI degree upon completion of the program, with three courses shared between the two degrees.

Admission Requirements

The minimum admission requirements for the program are:

1. Completion of at least 22 semester hours of core courses (excluding ENGR 100/ENGR 101 and BME 399), where core courses are listed under the [Required Engineering Courses](#) section of the catalog;
2. An institutional GPA of 3.30/4.00 or higher; and
3. A major GPA of 3.30/4.00 or higher.

Meeting these requirements will allow students to apply to the joint program in their junior year by the deadline specified on the UIC Graduate College's admission web page. Final admission decisions will be determined by the BME Graduate Committee, aligning with existing procedures for existing graduate programs within the BME department.

Students who do not meet the minimum application requirements by the stated deadline may still apply until July 15th of the same year. However, their applications will be reviewed by the BME Graduate Committee only after their grades and overall course performance are available.

Applications will be reviewed by the BME Graduate Committee, which reserves the right to decline or accept any applicant. Students admitted into the joint program will be considered undergraduate students until they have met all requirements to earn the BS degree. Only after all BS requirements have been met will admitted students become graduate students.

Degree Requirements

The requirements for completing the joint degree program are identical to those of the two separate degrees; however, three courses may be used for both degrees (meeting 7 semester hours of degree requirements within the BSBME and 9 semester hours of degree requirements within the MSBIOI, as explained below). To meet the minimum requirements for the joint degrees, students must therefore complete 121 undergraduate semester hours, plus 9 additional shared semester hours taken at the graduate level that count toward both the BSBME and MSBIOI degrees, and 27 additional credit hours of graduate coursework, resulting in joint BSBME/MSBIOI degrees.

Students accepted into the joint program may apply up to two graduate-level biomedical engineering courses (400-level, graduate version, 4 semester hours each) and one graduate-level seminar (e.g., BME 595) as part of their concentration area electives for the BS degree. The two 400-level BME courses will count as 6 semester hours of undergraduate concentration area electives. With the 1 semester hour from BME 595, joint degree students must complete at least 5 more semester hours to fulfill the required 12 semester hours in concentration area electives, and the 128 total semester hours for the BSBME degree. The two graduate-level BME courses will also count as 8 semester hours of 400-level coursework toward the MSBIOI degree.

These courses must meet all the following criteria:

1. Meet graduate-level course standards.
2. Meet Concentration Area Elective requirements for the BS degree.
3. Not be required courses for the completion of the undergraduate degree.

The course selections require pre-approval by an academic advisor and will be recorded in the student's academic record by the BME Student Affairs Office; in addition, the BME Student Affairs Office will submit the necessary forms to allow the undergraduate student to register for the graduate sections of these courses.

Sample Course Schedule

Course	Title	Hours
Freshman Year		
First Semester		
BME 101	Introduction to Biomedical Engineering	3
ENGR 100 or ENGR 101	Engineering Success Seminar for Freshmen ^a or Engineering Success Seminar for Transfer Students	1
MATH 180	Calculus I	4
BIOS 110	Biology of Cells and Organisms	4
CHEM 122	Matter and Energy	3
CHEM 123	Foundations of Chemical Inquiry I	2
Hours		16
Second Semester		
BME 102	Biomedical Engineering Freshman Seminar	1
MATH 181	Calculus II	4
CS 109	Programming for Engineers with MatLab	3
CHEM 124	Chemical Dynamics	3
CHEM 125	Foundations of Chemical Inquiry II	2
ENGL 160	Academic Writing I: Writing in Academic and Public Contexts	3
Hours		16
Sophomore Year		
First Semester		
PHYS 141	General Physics I (Mechanics)	4
MATH 210	Calculus III	3
BIOS 286	The Biology of the Brain	3
BME 240	Modeling Physiological Data and Systems	3
ENGL 161	Academic Writing II: Writing for Inquiry and Research	3
Hours		16
Second Semester		
BME 250	Clinical Problems in Biomedical Engineering	3
BME 205	Biomedical Engineering Thermodynamics	3
PHYS 142	General Physics II (Electricity and Magnetism)	4
MATH 220	Introduction to Differential Equations	3
MATH 218	Applied Linear Algebra	3
Hours		16

Junior Year**First Semester**

BME 310	Biological Systems Analysis	3
BME 325	Biotransport	3
BME 339	Biostatistics I	3
ECE 210	Electrical Circuit Analysis	3
Concentration Area Elective course		2
General Education Core course		3
Hours		17

Second Semester

BME 332	Bioinstrumentation and Measurements I	3
BME 333	Bioinstrumentation and Measurement Laboratory I	2
BME 399	Professional Development for Biomedical Engineers	0
BME 410	FDA and ISO Requirements for the Development and Manufacturing of Medical Devices	3
CME 260	Properties of Materials	3
Concentration Area Elective course		3
General Education Core course		3
Hours		17

Senior Year**First Semester**

BME 396	Senior Design I	3
BME 460	Materials in Biomedical Engineering	3
Concentration Area Elective (shared: enrolled as a graduate course)		4
General Education Core course		4
General Education Core course		3
Hours		17

Second Semester

BME 397	Senior Design II	3
BME 595	Seminar on Biomedical Engineering (shared, accepted as a Concentration Area Elective))	1
Capstone Lecture course		3
Capstone Laboratory course		2
Concentration Area Elective (shared: enrolled as a graduate course)		4
General Education Core course		3
Hours		16

Fifth Year**First Semester**

Selected graduate-level courses		15
Hours		15

Second Semester

Selected graduate-level course		12
Hours		12

Total Hours		158
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