

MASTER OF SCIENCE IN BIOMEDICAL ENGINEERING

This master's degree allows students to pursue advanced studies in biomedical engineering in the following areas: biomedical imaging and instrumentation, biomaterials and regenerative technologies, cellular engineering and mechanics, biomedical informatics and systems modeling, neuroengineering, and biomedical robotics.

The master's degree program requires 30 credit hours beyond the bachelor's degree. Both thesis and non-thesis options are available. Courses are offered all three terms; however, full-time students planning to complete the MS degree in 12 months should start their programs in the fall semester.

Students must maintain a minimum GPA of 3.0 in their program coursework. If a student's GPA drops below the required 3.0, they will be given two consecutive semesters to regain the minimum required GPA. Failure to do so will result in the student's dismissal from the MSBME program. Only 6 credits of upper division undergraduate courses are permitted, the remaining credits must be 6000 level or above. Six credits of coursework can also be transferred from another institution, including courses offered at Emory. Courses must be documented on the Program of Study and must be approved by the Graduate Program Committee.

Fundamental Courses: At least nine credit hours, with three credit hours in each of three Fundamental Courses: Bioscience, Data Science, and Engineering, are required. Courses can be selected from the following approved list:

- Bioscience: APPH 6211, APPH 6231, APPH 6400, BIOL 6570, BIOL 6750, BIOL 7001, BIOL 7015, BMED 6042, BMED 6793, CHEM 6501, or CHEM 6573.
- Data Science: APPH 6225, BMED 6041, BMED 6211, BMED 6517, BMED 6700, CHEM 6481, ISYE 6740, ECE 6250, ECE 6254, ECE 6258, ECE 6270, ECE 6500, ECE 6552, ECE 6605, ECE 7750.
- Engineering: AE 6009, AE 6511, BMED 6210, BMED 6739, BMED 6743, BMED 6780, BMED 6785, BMED 6786, BMED 6791, BMED 6799/CHBE 6779, BMED 6720/ME 6720, CHBE 6260, CHBE 6500, CHBE 6710, ECE 6730, ISYE 6740, ECE 6254, ECE 6270, ECE 6510, ECE 6550, ECE 6553, ECE 7750, ECE 7751/ISYE 7751/CS 7751, ISYE 7406, ME 6124, ME 6201, ME 6401, ME 6441, ME 6449, ME 6460, ME 6601, MP 6101, MSE 6405, MSE 6752, or MSE 6768

Electives: Course work must be from the College of Computing, College of Science, and/or College of Engineering, documented on the Program of Study, and approved by the Graduate Program Committee.

Below are the requirements for the thesis and non-thesis options.

Thesis Option for Master of Science in Biomedical Engineering

Students pursuing the Thesis Option must secure a thesis advisor. If a student is not able to do so, then the student will need to pursue the non-thesis option.

21 hours of coursework plus 9 hours of Thesis

Code	Title	Credit Hours
Courses		21
Fundamental Courses		At least 9
Approved Electives		At least 6
Thesis Hours		9
BMED 7000 Master's Thesis		
Total Credit Hours for Thesis Option		30

Non-Thesis Option for Master of Science in Biomedical Engineering

Focus Area: At least 9 credit hours in one of four Focus Areas: Biomechanics, Biomedical Imaging, Cell, Tissue, and Biomaterials Engineering, and Neuroengineering. Courses within a Focus Area can be selected from the following approved list:

- Biomechanics: BMED 6720, BMED 6743, BMED 6775
- Biomedical Imaging: BMED 6786, BMED 6785, BMED 6210, and BMED 6780
- Cell, Tissue, and Biomaterials Engineering: BMED 6710, BMED 6777, BMED 6782, BMED 6794, BMED 7310, and BMED 7510
- Neuroengineering: BMED 6791, BMED 7610

Focus Area electives may count for both the Focus Area requirement and another of the listed categories, however, the total Credit Hours must be at least 30.

30 hours of coursework

Code	Title	Credit Hours
Courses		30
Fundamental Courses		At least 9 hours
Focus Area		At least 9 hours
Approved Electives		At least 9 hours
Total Credit Hours for Non-Thesis Option		30

BS/MS Option

Students completing both a bachelor's and master's in biomedical engineering at Georgia Tech may use up to six credit hours of graduate-level coursework in the major discipline for both degrees. Students still must complete all other course requirements for both degrees.

Once admitted, a GPA of at least 3.0 must be maintained to remain in the program.

Up to six credit hours of engineering and data science courses from the approved lists for the MS BMED Program may be shared as depth electives with the BS BMED Program. For students in the non-thesis option, a student who has received credit for the 4000-level version of a listed Focus Area course may count those credit hours as a Focus Area elective. However, these credits must not exceed the limit of 4000-level courses that may count for the MS degree, or the maximum hours that can be applied to both the BS and MS programs.