Démonstrate the following during the first few years after graduation:
The program strives to produce graduates who are expected to
Program Educational Objectives
learning skills and problem-solving skills in a team-based environment.
learning (PBL) methodologies to foster development of both self-directed
unique aspect of the curriculum is the incorporation of problem-based
grounding in humanities, social sciences, and communication skills. A
true integration of the life sciences and engineering is essential in
educating a substantial percentage of the next generation of biomedical
engineers in order to benefit from the biological revolution and its
applications to medicine. This degree program attracts outstanding
students who wish to have that integration in their undergraduate
education, so that they may be equipped with the tools to be leaders in
this field in the 21st Century.

The curriculum includes a solid foundation in fundamental engineering,
mathematics, and sciences - biology, chemistry, and physics - as well as
grounding in humanities, social sciences, and communication skills. A
unique aspect of the curriculum is the incorporation of problem-based
learning (PBL) methodologies to foster development of both self-directed
learning skills and problem-solving skills in a team-based environment.

Program Educational Objectives
The program strives to produce graduates who are expected to
demonstrate the following during the first few years after graduation:

1. mathematics, science, and engineering fundamentals expertise at the
interface of engineering and the life sciences which enables them to
take leadership roles in the field of biomedical engineering;
2. an ability to use their multidisciplinary background to foster
communication across professional and disciplinary boundaries with
the highest professional and ethical standards; and
3. the ability to recognize the limits of their knowledge and initiate self-
directed learning opportunities to be able to continue to identify
and create professional opportunities for themselves in the field of
biomedical engineering.

BACHELOR OF SCIENCE IN
BIOMEDICAL ENGINEERING

Bachelor of Science in Biomedical Engineering

1. Introduction to Biomedical Engineering
2. Conservation Principles in Biomedical Engineering
3. Statics
4. Multivariable Calculus
5. Differential Equations
6. Chemical Principles I

Core F - Courses Related to Major
BMED 2250 Problems in Biomedical Engineering
BMED 2310 Intro to Biomedical Engineering Design
BMED 3100 Systems Physiology
BMED 3110 Quantitative Engineering Physiology Laboratory I
BMED 3310 Biotransport
BMED 3410 Introduction to Biomechanics
BMED 3520 Biomedical Systems and Modeling
BMED 3600 Physiology of Cellular and Molecular Systems
BMED 3610 Quantitative Engineering Physiology Laboratory II
BMED 4000 The Art of Telling Your Story
BMED 4602 Capstone Design
or BMED 47 Interdisciplinary Capstone Design

Other Engineering and Science Requirements
CHEM 1315 Survey of Organic Chemistry for Engineers
CEE 3770 Statistics and Applications
or ISYE 3770 Statistics and Applications
or BMED 240 Introduction to Bioengineering Statistics
MSE 2001 Principles and Applications of Engineering Materials
ECE 3710 Circuits and Electronics
ECE 3741 Instrumentation and Electronics Lab
BMED Depth Electives
BMED Depth Electives
BMED Breadth Electives
BMED Breadth Electives
Total Credit Hours

Pass-fail only allowed for Free Electives, Humanities, and Social
Sciences.

Students must average a 2.0 for all BMED coursework required by name
and number (includes BMED 1000 and BMED 2110)

Student must earn a 2.0 average
in MATH 1551, MATH 1552, MATH 1553, MATH 2551, and MATH 2552.

1 If PHYS 2231 is taken, extra hour goes to Free Electives.
The overarching model for the International Plan has four components:
1. International coursework. Please consult with advisor on course selection.
2. International experience: Two terms abroad (not less than 26 weeks) engaged in any combination of study abroad, research, or internship.
3. Second language proficiency: All students in the program are expected to reach at least the proficiency level equivalent to two years of college-level language study. Students who use the language to study, conduct research, or participate in an internship during their international experience are expected to attain a higher level of proficiency. Language proficiency is determined by testing (not course credits).
4. Culminating course: A capstone course in the major designed to tie the international studies and experiences together with the student’s major. The senior design project (i.e. BMED) will be used to satisfy this requirement. The design project must incorporate a significant element of the international experience (e.g. foreign client, location of work, project customers, motivation, regulatory issues, etc).

Completion of the International Plan is recognized by a designation on the student’s diploma indicating completion of the degree with global competence.

For additional information about the International Plan visit www.oie.gatech.edu/internationalplan.

Research Option

The Research Option is intended for students who seek a concentrated research experience, culminating in an undergraduate thesis, integrated into their undergraduate studies in biomedical engineering. Students are strongly encouraged at the end of their experience to work with their faculty mentor to develop a journal publication or conference presentation on the research in addition to the actual thesis. Students who complete this option receive a designation on their transcript.

Students may be able to satisfy the additional requirements imposed for the Research Option designation through appropriate choices of electives without additional credit hours to complete the degree. The Research Option designation may be pursued separately, or in combination with the Cooperative Plan and/or the International Plan.

Research Option Requirements

1. Complete at least nine credit hours of undergraduate research (i.e. BMED 2698, BMED 2699, BMED 4698, or BMED 4699) spanning typically at least three terms. The research may be for either pay or credit, and at least six credit hours must be on the same research project, broadly defined.
2. Take the course LMC 4701, typically in the second semester of research. The research proposal outlining the research topic and project for the thesis will be written for this course. The proposal must be approved by a faculty advisor and one other faculty member.
3. Take the course LMC 4702 during the thesis-writing semester. The thesis documenting the results of the research will be written as part of this course. It must be approved by two faculty members and will be archived in the Georgia Tech Library.