Chemical engineering is a discipline that traditionally has been based in the application of chemistry as an enabling science. The strength of that foundation has resulted in enormous advances in the chemical, petroleum, and related industries that have relied on chemical engineering to provide much of the intellectual capital on which they depend. Over time, and with increasing speed, the discipline has expanded so that biological sciences and chemistry now fill the position once uniquely held by chemistry. Georgia Tech’s School of Chemical & Biomolecular Engineering is a national leader in restructuring its curriculum and research initiatives to reflect that evolution.

The chemical and biomolecular engineering undergraduate curriculum leads to a Bachelor of Science in Chemical and Biomolecular Engineering. Chemical and biomolecular engineering principles are taught as the foundation of that degree but students also are expected to develop an ability to solve all kinds of problems, view systems in their entirety, and to formulate and test solutions irrespective of the framework of the problem. Completion of the BS degree prepares students for entry into the workforce, for advanced study in chemical and biomolecular engineering, or for countless other graduate programs.

**Mission**

The mission of the School of Chemical & Biomolecular Engineering is to provide students with the intellectual basis to be educated citizens, to prepare them for successful professional careers, and to advance the science and technology that form the basis of chemical and biomolecular engineering. In pursuit of this mission, the School has adopted the following:

**Program Educational Objectives**

- Graduates will demonstrate proficiency in the principles and methods essential to modern chemical and biomolecular engineering.
- Graduates will demonstrate broadened perspectives regarding social issues and responsibilities, ethics, and professionalism.
- Graduates will be recognized for excellence and leadership and selected for high-quality industrial, academic, government, and other professional positions.
- Graduates will demonstrate an understanding of the global nature of engineering practice and business activities.
- Graduates will understand the importance of further professional growth through continuing education and research.

**Program Outcomes**

In pursuit of its educational objectives, the School has adopted the following program outcomes:

- Students will demonstrate the ability to apply knowledge of mathematics, science, and engineering.
- Students will demonstrate the ability to design and conduct experiments, as well as to analyze and interpret data.
- Students will demonstrate the ability to design and conduct experiments, as well as to analyze and interpret data.
- Students will demonstrate an ability to lead and function on multidisciplinary teams.
- Students will demonstrate an ability to identify, formulate, and solve engineering problems.
- Students will demonstrate an understanding of professional and ethical responsibility.
- Students will demonstrate the ability to communicate effectively.
- Students will demonstrate a breadth in education that facilitates understanding the impact of engineering solutions in a global, economic, environmental, and societal context.
- Students will demonstrate recognition of the need for and an ability to engage in lifelong learning.
- Students will demonstrate knowledge of contemporary issues, especially as related to chemical engineering practice.
- Students will demonstrate the ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- Students will have an understanding of the chemical engineering profession as obtained through professional organizations, cooperative education, internships, undergraduate research, and/or required laboratory courses.
- Students will have a thorough grounding in the basic sciences including chemistry, physics, and biology appropriate to the program objectives.
- Students will demonstrate knowledge in the applications of these basic sciences to enable graduates to design, analyze, and control physical, chemical, and biological processes consistent with the program's educational objectives.
- Students will demonstrate recognition of the need for and an ability to engage in lifelong learning.
- Students will demonstrate knowledge of contemporary issues, especially as related to chemical engineering practice.
- Students will demonstrate the ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- Students will have an understanding of the chemical engineering profession as obtained through professional organizations, cooperative education, internships, undergraduate research, and/or required laboratory courses.
- Students will have a thorough grounding in the basic sciences including chemistry, physics, and biology appropriate to the program objectives.
- Students will demonstrate knowledge in the applications of these basic sciences to enable graduates to design, analyze, and control physical, chemical, and biological processes consistent with the program's educational objectives.

In pursuit of these objectives, the following curriculum is designed to provide coverage of core areas of chemical and biomolecular engineering, and to allow students opportunities to explore the breadth of the discipline. The curriculum requires a total of 132 credit hours for the BS degree. The biotechnology option allows the student to focus intensely in this rapidly emerging area of chemical engineering. The standard program will also provide the flexibility to explore other areas of chemical engineering practice while providing an understanding of the biomolecular aspects of modern chemical engineering. The standard program will also allow chemical and biomolecular engineering students to tailor their educations to their particular interests and plans for their professional careers. Students are encouraged to use the required elective hours to earn a minor or certificate, or at least to focus their electives in an area of particular interest.

Many graduates have found international experience obtained as a student to be valuable later in their careers. The School is developing special initiatives to facilitate such experiences, and it has a longstanding six-week summer program at University College London in which students receive six credit hours of elective credit and credit for CHBE 4200.

Finally, although the focus of the curriculum is development of technical skills, it has elements geared to enhance communication, teamwork, and business skills.
Minors
Special opportunities exist for students wishing to pursue minors or certificates in fields of particular interest, and students are encouraged to explore the frontiers of knowledge through involvement in faculty-directed research.

Visit our website at www.chbe.gatech.edu (http://www.chbe.gatech.edu) for more information.

Minor Program of Study & Guidelines (http://www.catalog.gatech.edu/academics/minors)

Bachelor's Degrees
- Bachelor of Science in Chemical and Biomolecular Engineering (http://www.catalog.gatech.edu/programs/chemical-biomolecular-bs)
- Bachelor of Science in Chemical and Biomolecular Engineering - Biotechnology Option (http://www.catalog.gatech.edu/programs/chemical-biomolecular-engineering-biotechnology-option-bs)

Transfer Students
Due to the sequence of courses and the order in which they must be taken, students who transfer into the school of Chemical and Biomolecular Engineering (ChBE) from another university should expect to be enrolled for a minimum of six terms (a term is a semester or a summer session). If, for financial aid purposes, insurance, etc., students are required to be full-time, they should transfer to Georgia Tech having sufficient non-chemical and biomolecular engineering courses remaining to enroll full-time for six terms. All prerequisites and co-requisites must be followed.

The BS in Chemical and Biomolecular Engineering program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org (http://www.abet.org).