BACHELOR OF SCIENCE IN MATERIALS SCIENCE AND ENGINEERING

The materials science and engineering undergraduate program offers a BS degree in Materials Science and Engineering with concentrations in Polymer and Fiber materials, Structural and Functional materials, and Biomaterials. This versatile degree combines instruction in the fundamentals of ceramic, metallurgy, and polymer and fiber science and engineering with specialized knowledge and skills, including nano-, bio-, composite, electronic, and optical and magnetic materials. Freshmen and sophomores study basic chemistry, physics, mathematics, and engineering science and are introduced to the fundamental aspects of materials. Two English courses taken in the freshman year provide the foundation for further instruction in communications that is integrated throughout the curriculum. Juniors and seniors take courses in the engineering and science of materials including the details of materials processing, structure, and properties. The curriculum culminates in a two-course senior design sequence in which students work in teams to design a material, component, or process using previously learned skills and knowledge.

Five concentration related courses provide flexibility that allow students in their junior-senior years to focus in a particular area of materials. Five hours of free electives allows students to further specialize or pursue other interests. Courses in the humanities/fine arts and social sciences ensure that graduates appreciate the role of engineering in today's global society.

Mission Statement

The mission of the Bachelor of Science in Materials Science and Engineering program is to produce graduates well-rounded in the fundamentals of materials science and engineering who are prepared to meet the related needs of industry and government, and prepared for advanced academic study in materials related disciplines. This will be accomplished by providing students with up-to-date knowledge and skills through coursework, modern laboratories, opportunities to conduct cutting edge research with distinguished faculty mentors, and opportunities to participate in leadership and service activities.

Program Educational Objectives

The Program Educational Objectives of the Bachelor of Science in Materials Science and Engineering program are:

- Our graduates will rapidly rise to leadership roles in materials-related positions in industry, academia, government, and other career pursuits.
- Our graduates will be global leaders, collaborating with diverse, multi-disciplinary teams while incorporating emerging materials developments and engineering technologies that are positively changing society and the human condition.
- Our graduates will continue to grow their cumulative knowledge base by engaging in life-long learning via career-appropriate options, including post-graduate education and professional designations.
- Our graduates will be entrepreneurs, continually discovering, designing and creating new materials of all types, building on the process-structure-properties-performance paradigm to exert positive economic and social impacts across the field and society.

Grade Requirements

In order to encourage students to explore subjects of personal or professional interest without jeopardizing their GPA, the Institute has a limited pass/fail option. The policy of the School of Materials Science and Engineering regarding the use of pass/fail hours for credit is as follows: no course specifically required by name and number by the materials science and engineering curriculum may be taken on a pass/fail basis and used toward graduation, unless the course is offered only on that basis.

In cases of deficiencies obtained for the intended graduation term, refer to Section VII (on Deficiencies) of the Rules and Regulations published in the on-line General Catalog.

Transfer Students

Students transferring into Materials Science and Engineering from another university or major should meet with the Associate Chair for Undergraduate Programs to discuss possible course substitutions and plan their remaining coursework.

- Bachelor of Science in Materials Science and Engineering - Biomaterials (http://www.catalog.gatech.edu/programs/materials-science-engineering-biomaterials-bs/)
- Bachelor of Science in Materials Science and Engineering - Polymer and Fiber Materials (http://www.catalog.gatech.edu/programs/materials-science-engineering-polymer-fiber-materials/)