Accelerated programs are designed to allow highly qualified students to count 9 credit hours of their undergraduate degree towards selected graduate degree programs. This is achieved by students completing graduate level courses (6000-level and 8000-level) and receiving dual credit for equivalent undergraduate courses (4000-level and 4990 respectively). Students must apply and be admitted to an accelerated program prior to enrolling in the graduate level classes. In general, at the time a student applies to an accelerated program, the student must:

- Be enrolled at Mississippi State University in a BCoE undergraduate degree program.
- Have completed a minimum of 60 credit hours towards a bachelor’s degree (may vary by program).
- Have an overall GPA of 3.5 or higher for all undergraduate work.

Accelerated programs are offered in the following fields:

**Bachelor’s Degrees**
- Aerospace Engineering
- Aeronautics
- Astronautics
- Biological Engineering
- Biomedical Engineering
- Chemical Engineering
- Biomolecular
- Chemical Engineering Practice
- Civil Engineering & R&D
- Computer Engineering
- Cybersecurity
- Electrical Engineering
- Industrial Engineering
- Mechanical Engineering
- Petroleum Engineering
- Software Engineering

**Master’s Degrees**
- Aerospace Engineering*
- Biological Engineering
- Biomedical Engineering
- Chemical Engineering*
- Civil Engineering*
- Computational Engineering*
- Computer Science*
- Cyber Security & Operations*
- Electrical & Computer Engineering*
- Industrial Engineering*
- Master of Engineering*
- Military Engineering*
- Mechanical Engineering*

* also available online

**Doctoral Degrees**
- Aerospace Engineering*
- Applied Physics
- Biological Engineering
- Biomedical Engineering
- Chemical Engineering*
- Civil Engineering*
- Computational Engineering*
- Computer Science*
- Electrical & Computer Engineering*
- Engineering Education*
- Industrial & Systems Engineering*
- Military Engineering*

**Certificate Programs**
- Automotive Engineering
- Computational Biology
- Cyber Security
- Cyber Operations
- Information Assurance
- Energy
- Entrepreneurship
- Materials
- MBA Venture Pathway

**Typical Minors**
- Business/Entrepreneurship
- Computer Science
- Electrical Engineering
- Global Engineering Leadership
- Industrial Engineering Leadership Studies
- Mathematics
- Software Engineering

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**Enrollment Throughout the Years**

- 2016: 4600
- 2017: 4700
- 2018: 4800
- 2019: 4900
- 2020: 5000

**Enrollment by Gender**
- Graduate Male: 4%
- Graduate Female: 16%
- Undergraduate Male: 57%
- Undergraduate Female: 11%
Aerospace Engineering

B.S. AEROSPACE ENGINEERING
AERONAUTICS
ASTRONAUTICS
M.S. AEROSPACE ENGINEERING*
PH.D. AEROSPACE ENGINEERING*

Aerospace engineering is the branch of engineering concerned with the design, development, testing, and production of aircraft and related systems that fly within the Earth’s atmosphere (aeronautics) and of spacecraft, missiles, rocket propulsion systems and other equipment operating beyond the Earth’s atmosphere (astronautics).

Richard A. Rula School of Civil + Environmental Engineering

B.S. CIVIL ENGINEERING
ENVIRONMENTAL ENGINEERING
M.S. CIVIL ENGINEERING*
PH.D. CIVIL ENGINEERING*

Civil and environmental engineering deals with many aspects of society including water resources, environmental sanitation, intermodal transportation, structures and many other parts of the infrastructure of modern life. These projects help promote public safety, foster economic and community development and raise the standard of living.

Dave C. Swalm School of Chemical Engineering

B.S. CHEMICAL ENGINEERING
CHEMICAL ENGINEERING PRACTICE
CHEMICAL ENGINEERING RESEARCH/DEVELOPMENT
BIOMOLECULAR
B.S. PETROLEUM ENGINEERING
M.S. CHEMICAL ENGINEERING*
PH.D. CHEMICAL ENGINEERING*

Chemical engineering applies chemistry and math to make processes and products that improve all aspects of life including pharmaceuticals, semiconductors, artificial kidneys, solar panels, clean water and biocompatible polymers. Petroleum engineering prepares students for careers in the oil and gas industry, specifically reservoir engineering.

Agricultural + Biological Engineering

B.S. BIOLOGICAL ENGINEERING
B.S. BIOMEDICAL ENGINEERING
M.S. BIOLOGICAL ENGINEERING
M.S. BIOMEDICAL ENGINEERING
PH.D. BIOLOGICAL ENGINEERING
PH.D. BIOMEDICAL ENGINEERING

Biological engineering offers the same foundational knowledge as any other engineering discipline plus additional knowledge in chemistry, biological sciences, biochemistry and microbiology. Biomedical engineering combines engineering principles and biomedical sciences to solve problems that deal with the human body and health.
Computer Science & Engineering

B.S. COMPUTER SCIENCE
B.S. CYBERSECURITY
B.S. SOFTWARE ENGINEERING
M.S. COMPUTER SCIENCE
M.S. CYBER SECURITY & OPERATIONS
PH.D. COMPUTER SCIENCE

Computer science provides a foundation of knowledge for students with career objectives in a wide range of computing and computer-related professions. Software engineering helps fill the tremendous demand for engineers who can design and build reliable large-scale software systems. Cybersecurity is designed for students who wish to help meet the challenges posed by increasing cyber-threats.

Electrical + Computer Engineering

B.S. ELECTRICAL ENGINEERING
B.S. COMPUTER ENGINEERING
M.S. ELECTRICAL & COMPUTER ENGINEERING
PH.D. ELECTRICAL & COMPUTER ENGINEERING

Electrical engineering uses science, technology and problem solving skills to design, construct, develop and maintain electrical products, services, devices and information systems. Computer engineering involves the creation of intelligent systems characterized by the application of embedded digital processing technology.

Industrial & Systems Engineering

B.S. INDUSTRIAL ENGINEERING
B.S. IE/B.B.A. BUSINESS ADMINISTRATION
M.S. INDUSTRIAL ENGINEERING
PH.D. INDUSTRIAL & SYSTEMS ENGINEERING

Industrial and systems engineering involves the design, improvement and installation of integrated systems of people, materials, information, equipment and energy. The task of an industrial and systems engineer is to improve the performance and safety of processes by identifying and eliminating wastes of time, money, materials and energy.

Mechanical Engineering

B.S. MECHANICAL ENGINEERING
M.S. MECHANICAL ENGINEERING
PH.D. MECHANICAL ENGINEERING

Mechanical engineering is the application of science and mathematics to the design, development and operation of mechanical and energy systems. In addition to their strong foundation in the sciences, mechanical engineers must develop speaking and writing skills and spend much of their time creating complex design processes.
Research
Being a part of state-of-the-art research allows students numerous educational opportunities and the ability to be taught by over 100 professors actively involved in research. The college also has facilities to conduct a wide variety of design, analysis and testing and works with many centers such as the Center for Advanced Vehicular Systems (CAVS), the High Performance Computing Collaboratory (HPC²), and many others. Research is supported by external funding from many government agencies, as well as private companies.

Organizations & Teams
Student organizations and teams are a valuable part of the education of an engineering student. They provide opportunities for students to enhance their education and prepare themselves for the engineering profession. Students can meet professionals who come to campus which can aid in finding a job after graduation. They allow students to get to know their peers and the faculty within their majors. Spanning all engineering concentrations, these organizations and teams help students develop teamwork skills and give them a better understanding of each discipline.

Build leadership skills by joining a professional society or service organization. The BCoE has over 35 organizations, including Society of Women Engineers, National Society of Black Engineers, Tau Beta Pi National Engineering Honor Society, Society of Hispanic Professional Engineers, Engineering Recruitment Leaders, and Engineers Without Borders.

Participate in competition teams and events, like the Space Cowboys rocket team, EcoCar Mobility Challenge, ASCE Concrete Canoe Competition, or the Xipiter Unmanned Aircraft Systems team.

Membership in engineering student organizations is strongly encouraged. A student should belong to the technical organization representing their major as well as a professional organization representing all engineering fields.

Study Abroad
With today’s integrated global economy, engineers must understand other cultures and ways of doing business by being a part of collaborations that span the globe. In order to help engineering students be better prepared for the global workplace, the BCoE has developed opportunities and joined with other universities through the Global Engineering Education Exchange (GE3) to provide students and faculty with opportunities to gain international experience by studying abroad.
The Bagley College of Engineering ranks among the Top 15 colleges and universities nationally for graduating minority engineers. We sponsor a number of groups and programs that promote diversity and recognize that pairing inclusiveness with high academic achievement helps all students prepare for a career in engineering and computer science.

The National Society of Black Engineers, NSBE, encourages academic excellence, professional success and community involvement and strives to increase the number of black leaders in engineering.

The Society of Women in Engineering, SWE, is dedicated to changing the face of engineering and helping female engineers succeed in a professional and personal capacity.

The Society of Hispanic Professional Engineering, SHPE, strives to enhance the potential of Hispanics in engineering, math and science.

Increasing Minority Access to Graduate Education, IMAGE, provides a chance for early exposure to scientific study and research. IMAGE strives to provide a sense of community for minority students and to develop connections between upper and lower classmen.

Graduate Women in Science and Engineering, GWISE, works to improve the graduate school experience for women in science, engineering, mathematics, and in other technical fields.

The Summer Bridge program is used to help incoming minority freshman students adjust to university life and coursework in science, mathematics, engineering, and technology.

I Am Girl is designed to create an interest in engineering and science related fields for girls ages 11-14 years old, help mold positive mindsets toward engineering and science-related careers, show that engineering and science can be fun and creative, and demonstrate the role of science and engineering in shaping the global economy.

Involvement in MSU’s Cooperative Education Program allows students to earn money and gain practical experience. Students are encouraged to apply for the cooperative education or internship programs and will begin working on a resume, interviewing skills, and overall professional development. Cooperative education is a unique academic program that allows students to obtain valuable work experience related to their field of study while still in school. Work semesters alternate with school semesters, and after completing three work semesters, most students have gained 52 weeks of work experience before graduation.

BCoE graduates go on to work for many of the world’s top companies.