

COLLEGE OF ENGINEERING

General Information

(251) 460-6140

College of Engineering website
<https://www.southalabama.edu/colleges/engineering/>

College of Engineering Administrative Staff

Title	Name
Dean	John Usher
Associate Dean, Undergraduate Affairs	Eric Steward
Associate Dean, Research and Graduate Affairs	Clive Woods
Director of Graduate Studies	Clive Woods

Mission Statement

The mission of the College of Engineering is to provide students with quality accessible undergraduate and graduate engineering education, to prepare graduates for professional careers and lifelong learning, to promote the creation and dissemination of knowledge, to serve society through professional practice and community outreach and to act as a catalyst for economic and technological development of the Gulf Coast region, the State of Alabama and the Nation.

Honors Program in Engineering

To receive a designation of "Departmental Honors" students must have at least a 3.5 GPA at the time of graduation and complete an Honors Senior Project in their major. The Honors Senior Project requirement may be satisfied in either of two ways.

1. By completing an Honors Senior Project course that requires completion of a research project under the guidance of a faculty mentor.
2. By completing a special honors design project as part of the capstone engineering design requirement under the guidance of a faculty mentor.

It is required that there be both a written report and an oral presentation of the results of the Honors Senior Project.

Students participating in "Departmental Honors" may also elect to take the University Honors Seminar and participate in other University Honors Activities upon recommendation of their major advisor.

Undergraduate Admission

All students, whether domestic or international, are strongly encouraged to submit standardized test scores, either ACT or SAT.

Computer Ownership Policy

All College of Engineering undergraduate students are required to own a personal laptop computer that conforms to the current college minimum standards at the time they enter engineering level courses. For more information, consult the Laptop Policy at www.southalabama.edu/colleges/engineering/currentstudents/academicpolicies.html (<http://www.southalabama.edu/colleges/engineering/currentstudents/academicpolicies.html>).

Requirements for Minors in Disciplines Other than Engineering

Engineering students may complete a minor in disciplines other than engineering. Students desiring to do so must complete the published requirements for that discipline.

Choice of Bulletin for Undergraduate Degree Requirements

After an absence of one calendar year or when transferring into an engineering program, students must use the Bulletin in effect at the time of readmission or transfer, or a later version. No student may use a Bulletin older than six years from the date of graduation.

Cooperative Education Program

The College of Engineering also offers an attractive five year cooperative Education Program. This program allows students to gain valuable engineering experience as they pursue their degree. The freshman year is spent as a full-time student at the university. During the sophomore and junior years the students alternate working full time with an excellent salary for one semester and taking full-time course work the next semester. Students return to study full time for the senior year. This program offers many advantages for students. Interested students should consult with either the Career Services Center or the College of Engineering Dean's Office.

Master's Program

The College of Engineering offers programs leading to degrees of Master of Science in Chemical, Civil, Electrical, Mechanical, and Systems Engineering. The programs of study are designed to provide knowledge of modern engineering concepts and practices; to prepare the graduate for the practice of engineering at a higher level of proficiency than attainable with the bachelor's degree; and to prepare the graduate for further study toward the doctoral degree should the graduate so desire. The programs comprise course work and direct theoretical and experimental inquiry in thesis or project research. For details, see the Master of Science in Chemical Engineering, Master of Science in Civil Engineering, Master of Science in Electrical Engineering, Master of Science in Mechanical Engineering, and Master of Science in Systems Engineering program.

Doctor of Philosophy (Ph.D.) in Systems Engineering

The Doctor of Philosophy (Ph.D.) in Systems Engineering offers students a holistic approach to the design and understanding of complex systems. NASA defines systems engineering as "a holistic, integrative discipline, wherein the contributions of structural engineers, electrical engineers, mechanism designers, power engineers, human factors engineers, and many more disciplines are evaluated and balanced, one against another, to produce a coherent whole that is not dominated by the perspective of a single discipline." At USA, we emphasize a model-based systems engineering approach (MBSE) in many of our courses. The main objectives of the Ph.D. program are to:

1. provide our graduates with the ability to approach all systems (engineered, environmental, coastal, biological, social/organizational, etc.) with the ability to understand the entire system lifecycle in a manner that meets the needs of industry, and
2. prepare our graduates for leadership positions requiring applied research along with critical and creative thinking.

This program is appropriate for students who want to pursue research-based careers in industry, government, or academia. The program requires coursework across multiple engineering disciplines, and specific,

validated systems research resulting in a publicly defended doctoral thesis.

Departments of Instruction

- Chemical And Biomolecular Engineering (<http://bulletin.southalabama.edu/programs-az/engineering/chemical-biomolecular-engineering/>)
 - Chemical Engineering (BS) (<http://bulletin.southalabama.edu/programs-az/engineering/chemical-biomolecular-engineering/chemical-engineering-bs/>)
 - Chemical Engineering (MS) (<http://bulletin.southalabama.edu/programs-az/engineering/chemical-biomolecular-engineering/chemical-engineering-ms/>)
- Civil, Coastal, And Environmental Engineering (<http://bulletin.southalabama.edu/programs-az/engineering/civil-coastal-environmental-engineering/>)
 - Civil Engineering (BS) (<http://bulletin.southalabama.edu/programs-az/engineering/civil-coastal-environmental-engineering/civil-engineering-bs/>)
 - Civil Engineering (MS) (<http://bulletin.southalabama.edu/programs-az/engineering/civil-coastal-environmental-engineering/civil-engineering-ms/>)
 - Civil Engineering - Coastal Engineering Certificate (<http://bulletin.southalabama.edu/programs-az/engineering/civil-coastal-environmental-engineering/civil-engineering-coastal-certificate/>)
 - Civil Engineering - Structural Engineering Certificate (<http://bulletin.southalabama.edu/programs-az/engineering/civil-coastal-environmental-engineering/civil-engineering-structural-certificate/>)
 - Civil Engineering - Water/Wastewater Engineering Certificate (<http://bulletin.southalabama.edu/programs-az/engineering/civil-coastal-environmental-engineering/civil-engineering-water-wastewater-certificate/>)
- Electrical and Computer Engineering (<http://bulletin.southalabama.edu/programs-az/engineering/electrical-computer-engineering/>)
 - Computer Engineering (BS) (<http://bulletin.southalabama.edu/programs-az/engineering/electrical-computer-engineering/computer-engineering-bs/>)
 - Electrical Engineering (BS) - General Track (<http://bulletin.southalabama.edu/programs-az/engineering/electrical-computer-engineering/electrical-engineering-bs-general-track/>)
 - Electrical Engineering (BS) - Premed Track (<http://bulletin.southalabama.edu/programs-az/engineering/electrical-computer-engineering/electrical-engineering-bs-premed-track/>)
 - Electrical Engineering (MS) (<http://bulletin.southalabama.edu/programs-az/engineering/electrical-computer-engineering/electrical-engineering-ms/>)
- Systems Engineering (<http://bulletin.southalabama.edu/programs-az/engineering/systems-engineering/>)
 - Systems Engineering (MS) (<http://bulletin.southalabama.edu/programs-az/engineering/systems-engineering/systems-engineering-ms/>)
 - Systems Engineering (Ph.D.) (<http://bulletin.southalabama.edu/programs-az/engineering/systems-engineering/systems-engineering-phd/>)
 - Systems Engineering Certificate Program (<http://bulletin.southalabama.edu/programs-az/engineering/systems-engineering/systems-engineering-certificate-program/>)
- William B. Burnsed, Jr. Mechanical, Aerospace, and Biomedical Engineering (<http://bulletin.southalabama.edu/programs-az/engineering/mechanical-aerospace-biomedical-engineering/>)
 - Mechanical Engineering (BS) (<http://bulletin.southalabama.edu/programs-az/engineering/mechanical-aerospace-biomedical-engineering/mechanical-engineering-bs/>)
 - Mechanical Engineering (BS) - Aerospace Track (<http://bulletin.southalabama.edu/programs-az/engineering/mechanical-aerospace-biomedical-engineering/mechanical-engineering-bs-aerospace-track/>)
 - Mechanical Engineering (BS) - Biomedical Engineering Track (<http://bulletin.southalabama.edu/programs-az/engineering/mechanical-aerospace-biomedical-engineering/mechanical-engineering-bs-biomedical-track/>)
 - Mechanical Engineering (MS) (<http://bulletin.southalabama.edu/programs-az/engineering/mechanical-aerospace-biomedical-engineering/mechanical-engineering-ms/>)
 - Mechanical Engineering - Accelerated Bachelor's to Master's Program (<http://bulletin.southalabama.edu/programs-az/engineering/mechanical-aerospace-biomedical-engineering/mechanical-engineering-accelerated-bachelors-masters-program/>)

Admission Requirements

Undergraduate Admission

All students, whether domestic or international, are strongly encouraged to submit standardized test scores, either ACT or SAT.

Admission to Graduate Programs

The minimum requirements for admission to the graduate degree programs in this College differ slightly between programs and are listed in the Bulletin entry for each program.

Each application will be reviewed by the Admissions Committee of the appropriate department which may reserve the right to evaluate additional credentials, such as, but not limited to, course work taken, and letters of recommendation.

The minimum requirements for non-degree graduate admission (or admission prior to declaring a graduate degree program) are the same as the minimum requirements for admission to the Graduate School and are listed in the Bulletin entry for the Graduate School, but applicants wishing to register later for a graduate degree must ensure that they will at that time satisfy the requirements for that degree.

College Requirements

Undergraduate

Admission to the University of South Alabama constitutes admission to the College of Engineering for those students wishing to major in engineering. Incoming students should specify a particular discipline in the College as a major as soon as practical in order to receive proper counseling to pursue their engineering course work. Transfer students must declare a major and have all transfer credit evaluated by the Admissions Office. The department chair will approve transfer credit for engineering degree credit except where substitutions are involved; substitutions require the approval of the dean. Transfer students are

encouraged to have departmental evaluations accomplished prior to their first registration for classes.

Entering freshmen students not adequately prepared to enter the degree program may be required to take additional preparatory course work. Such preparatory work will not be counted toward the major degree program.

Students must have the prerequisites for the courses in which they enroll; students who enroll without prerequisites are subject to administrative withdrawal. Prerequisites are satisfied by courses taken either at the University of South Alabama or by acceptable transfer credit. Students not exempted from EH 101 will be required to take it as a prerequisite to EH 102.

Today's society is permeated by an extensive technology that affects the lives of everyone. The engineering function in this modern society – while basically unchanged from the goal of using natural resources for the betterment of mankind – has more far-reaching and immediate consequences than ever before through the social, economic, environmental, and political reactions that follow technological developments.

The engineering profession has recognized that to fulfill the social as well as technical responsibilities incumbent upon today's engineer, engineering graduates must not only be technically competent, but must also be as broadly educated as possible within the allotted educational time period. To this end, the College of Engineering strives to prepare its students ultimately to assume their responsibilities by providing technically sound programs of instruction that incorporate a strong component in the humanities and social sciences. Graduates are prepared so they may take industrial positions, assume positions with government, or pursue graduate studies.

Engineering students may also qualify as premedical students should they desire to apply for admission to medical school. Students interested in medical careers should consult the Dean of the College of Medicine.

General Education Requirements

Engineering students must comply with the University's general education requirements. In the area of Humanities and Fine Arts, engineering students are required to take a total of at least 9 semester hours with a minimum of 3 semester hours in literature and a minimum of 3 semester hours in the arts with the remaining hours from the Humanities and Fine Arts. In the area of History, Social, and Behavioral Sciences, engineering students are required to take at least 9 semester hours with a minimum of 3 semester hours in history and a minimum of 3 semester hours from among the other disciplines in the social and behavioral sciences.

Professional Component Standing for Undergraduate Programs

It is important that students make adequate progress in departmental majors within the College of Engineering, so each department establishes a list of courses that must be satisfactorily completed with a minimum grade before the student is allowed to proceed with more advanced courses. Professional Component Standing (PCS) within a department indicates that these courses have been satisfactorily completed. Six courses are required for PCS in every department, so they are collectively required for every student. The PCS requirements for all College of Engineering students are shown in the following table:

College of Engineering PCS Requirements

Minimum Grade C

Code	Title	Hours
EH 101	English Composition I	3
EH 102	English Composition II	3
CH 131 & 131L	General Chemistry I and General Chemistry I Lab	4
MA 125	Calculus I	4
MA 126	Calculus II	4
PH 201	Calculus-Based Physics I (+Lab)	4

In addition, all departments in the College of Engineering require Departmental Professional Component Standing for enrollment in most 300- and 400-level courses. PCS is awarded by the appropriate department chair when the student completes the College of Engineering PCS requirements and the departmental PCS requirements. See the departmental policy statements for additional details.

Requirements for a Bachelor's Degree

To become a candidate for a Bachelor of Science degree in one of the five major disciplines within the College of Engineering, the student must satisfy the general requirements of the University as set forth in "Academic Policies and Procedures", and must have satisfactorily completed the program of instruction specified by the major department. In addition to these requirements, the Engineering student must have at least a GPA of 2.00 or C-level competency in all subjects taken in the student's major department at the University of South Alabama.

Mechanical and Civil Engineering students are required to take and make a "good faith" effort to pass the Fundamentals of Engineering (FE) examination prior to their anticipated date of graduation. Students should be aware of the deadline established by the National Council of Examiners for Engineering and Surveying (NCEES) for submission of examination application materials. Failure to meet the deadline could result in delayed graduation.

A transfer student must complete at least 25 percent of the credit hours required for the degree from upper-division courses with at least 16 hours in the upper level of the student's major department at the University of South Alabama.

Engineering students with less than 15 credit hours are required to take EG 101. This requirement for EG 101 can be waived by the student's advisor once it is demonstrated that a particular student has been exposed to material covered in this course and most likely is not going to benefit from this course. An appropriate math, science or engineering course must be substituted if the student does not take EG 101.

Accelerated Bachelor's to Master's Program

The College of Engineering allows well-qualified undergraduates in the program to follow an "Accelerated Bachelor's to Master's" study plan. This plan permits up to six credit hours of graduate coursework to count towards both the Bachelor's (as Technical Electives) and the Master's degrees, so that the Master's degree is earned faster than usual. (The coursework concerned must individually satisfy the requirements of both degrees.) See a departmental advisor for specific details.

ABM students must meet all requirements for admission to the Graduate School. However, each degree program has specific requirements that may exceed Graduate School minimums. An ABM student must meet all requirements of their specific degree program. A complete Graduate School application is required.

Eligibility Requirements

- 3.0 cumulative undergraduate GPA
- Have completed at least 90 credit hours
- Have completed at least 30 credit hours at USA

A student who withdraws or is dismissed from the ABM program may not count graduate coursework towards both degrees. Graduate courses for which an undergraduate student did not earn an "A" or "B" grade may not be counted towards the graduate degree.

ABM students must be full-time students and must complete all degree requirements for the Master's degree within three semesters of the semester in which they were admitted to the Graduate School. An exception for a fourth semester may be granted where an additional semester is required for final revisions to and submission of a defended thesis. Exceptions to the ABM policy are at the discretion of the Dean of the Graduate School.

Graduate study requirements

The requirements for each graduate program of study are stated in the Bulletin entry for that program.