

# COLLEGE OF ENGINEERING AND COMPUTING

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Ruth B. Patterson, *Assistant Dean for Student Services*

Paul H. Ziehl, *Associate Dean for Research*

## Baccalaureate Degrees

The College of Engineering and Computing offers the following baccalaureate degrees:

- Aerospace Engineering, B.S.E. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/mechanical-engineering/aerospace-engineering-bse/>)
- Biomedical Engineering, B.S. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/biomedical-engineering/biomedical-engineering-bs/>)
- Chemical Engineering, B.S.E. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/chemical-engineering/chemical-engineering-bse/>)
- Civil Engineering, B.S.E. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/civil-environmental-engineering/civil-engineering-bse/>)
- Computer Engineering, B.S.E. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/computer-science-engineering/computer-engineering-bse/>)
- Computer Information Systems, B.S. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/computer-science-engineering/computer-information-systems-bs/>)
- Computer Science, B.S.C.S. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/computer-science-engineering/computer-science-bscs/>)
- Electrical Engineering, B.S.E. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/electrical-engineering/electrical-engineering-bse/>)
- Integrated Information Technology, B.S. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/integrated-information-technology/integrated-information-technology-bs/>)
- Mechanical Engineering, B.S.E. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/mechanical-engineering/mechanical-engineering-bse/>)

The curricula for all baccalaureate degree programs include a set of courses that fulfill the general education requirements of the University and a set of courses that are specific to the major. Students have the opportunity to pursue specializations within these basic programs.

The programs in Biomedical Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, and Mechanical Engineering are accredited by the Engineering Accreditation

Commission of ABET. The programs in Computer Science, Computer Information Systems and Integrated Information Technology are accredited by the Computing Accreditation Commission of ABET. For additional information, visit <http://www.abet.org>.

## Minors

The College of Engineering and Computing offers the following minors for qualified students:

- Aerospace Engineering Minor (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/mechanical-engineering/aerospace-engineering-minor/>)
- Applied Computing Minor (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/computer-science-engineering/applied-computing-minor/>)
- Chemical Engineering Minor (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/chemical-engineering/chemical-engineering-minor/>)
- Computer Science Minor (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/computer-science-engineering/computer-science-minor/>)
- Data Science Minor (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/computer-science-engineering/data-science-minor/>)
- Electrical Engineering Minor (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/electrical-engineering/electrical-engineering-minor/>)
- Integrated Information Technology Minor (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/integrated-information-technology/integrated-information-technology-minor/>)
- Nuclear Engineering Minor (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/mechanical-engineering/nuclear-engineering-minor/>)

A student in the College of Engineering and Computing may add to his or her program of study any minor listed in the Academic Programs A-Z (<https://academicbulletins.sc.edu/undergraduate/programs-az/>) section of this bulletin, provided the minor field of study is distinctly different from the major. Students completing the Computer Information Systems bachelor's degree program automatically earn a minor in Business Information Systems. In most other cases, additional coursework is required to add a minor to a program of study.

## Second Baccalaureate Degree

In accordance with the university's Second Baccalaureate Degree, students may apply for two undergraduate degrees from the College of Engineering and Computing. In addition, the College of Engineering and Computing cooperates with other colleges in the awarding of two degrees. Often, coursework beyond the policy-specified minimum semester hour difference is required to complete the second degree.

## Second Major

In accordance with the university's Second Major policy, qualified students may apply for graduation with double majors in Computer Science and in Mathematics.

## Accelerated Graduate Degrees

### Accelerated Engineering and Computing Programs

Certain majors within the College of Engineering and Computing offer accelerated bachelors/graduate degree programs in accordance with the procedures given under the “Academic Regulations” section of this bulletin. In such programs, undergraduate students may take course work for graduate credit. The graduate credits may be applied to the student’s baccalaureate program. The number of such credits that may be applied towards an undergraduate degree and a graduate degree are determined by the associated degree programs.

Eligible undergraduate students must have completed at least 90 hours of undergraduate course work, must have both a cumulative and major GPA of 3.4 or better, and have the approval of their undergraduate advisor, the Graduate Director of the relevant graduate program, the Dean of Graduate Studies, and the instructor for each course to be taken. The credits must be earned during the student’s senior year. Interested students should complete the Application for Admission to an Accelerated Bachelor’s/Graduate Study Plan (<http://gradschool.sc.edu/forms/G-BGCA.pdf>), available from The Graduate School.

### Accelerated International Masters in Business Administration

The College of Engineering and Computing and the Moore School of Business support the BS/IMBA program for undergraduate students in the College of Engineering and Computing. Under this program, undergraduate students with appropriate co-op or work experience and a GPA of 3.40, both overall and in their major field of study, may first submit an Application for Admission to an Accelerated Bachelor’s/Graduate Study Plan to the Graduate School for acceptance to the accelerated program during the semester in which they will have 90 undergraduate credit hours.

Students must also apply to the Moore School of Business for acceptance to the IMBA program. Satisfactory scores on the GMAT are required. Generally, the equivalent of at least one year of full-time professional experience is required for acceptance to the accelerated BS/IMBA program. Students will generally officially start taking IMBA core courses during the summer after they are within 30 hours of completing the undergraduate degree. The following year will be spent taking elective courses in the IMBA program. The first year of the IMBA program is tightly structured and provides little flexibility in scheduling, including the required internship. Courses remaining to complete the requirements for both programs will be taken during the second year of the IMBA program. Up to 9 hours of graduate courses may be used for dual credit in both programs. The specific courses must be approved by both programs for dual credit.

## Cooperative Education

The Cooperative Education Program is an optional program designed to provide career-related work experiences, which can either alternate, or run concurrently with academic semesters. The purpose of the co-op experience is to give direction and enrichment to the student’s education, to help the student in career decision making, to improve after-graduation job prospects, and to enable students to pay for a significant portion of their college expenses.

To qualify for the co-op program, students must have completed 30 semester hours and have at least a 2.50 grade point average. The program requires that students participate in at least two work experiences, each equal to one academic semester, and maintain at least a 2.50 grade point average. Students are encouraged to enroll with the Engineering and Computing Career Services Office during their freshman year. More information is available from the Career Center’s co-op website ([http://sc.edu/about/offices\\_and\\_divisions/career\\_center/](http://sc.edu/about/offices_and_divisions/career_center/)).

## General Education Requirements

A student must satisfy all Carolina Core (<https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/>) requirements to receive a baccalaureate degree from the College of Engineering and Computing. Specific courses and guidelines to satisfy these requirements are determined by each degree program in the College. Individual degree programs may also have additional requirements that could be considered as contributing to general education.

## Progression Requirements

Any program-specific progression requirement policies are described in that program’s section of this bulletin. Students who are within 30 hours of completing all degree requirements should request a senior check from the Student Services Office.

## Program GPA Requirement

The College of Engineering and Computing requires that students have a Program GPA of 2.00 or better. A listing of courses included in the Program GPA for each degree program is maintained in the respective academic program section of this bulletin. The Program GPA computation will include all repeated grades, with the exception of those for which the university approved grade forgiveness has been applied. A student not meeting these requirements must change major or transfer out of the College of Engineering and Computing. Click the program link below for specific *Program GPA* information.

- Aerospace Engineering, B.S.E. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/mechanical-engineering/aerospace-engineering-bse/>)
- Biomedical Engineering, B.S. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/biomedical-engineering/biomedical-engineering-bs/>)
- Chemical Engineering, B.S.E. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/chemical-engineering/chemical-engineering-bse/>)
- Civil Engineering, B.S.E. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/civil-environmental-engineering/civil-engineering-bse/>)
- Computer Engineering, B.S.E. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/computer-science-engineering/computer-engineering-bse/>)
- Computer Information Systems, B.S. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/computer-science-engineering/computer-information-systems-bs/>)
- Computer Science, B.S.C.S. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/computer-science-engineering/computer-science-bscs/>)

- Electrical Engineering, B.S.E. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/electrical-engineering/electrical-engineering-bse/>)
- Integrated Information Technology, B.S. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/integrated-information-technology/integrated-information-technology-bs/>)
- Mechanical Engineering, B.S.E. (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/mechanical-engineering/mechanical-engineering-bse/>)

## Repetition of Coursework

A student cannot repeat courses from the College of Engineering and Computing in which they earned a grade of **C** or better. In addition, a student cannot repeat any course from the College a second time. For this purpose, withdrawal from a course with a grade of **W** is not regarded as enrollment in that course. A student that does not satisfactorily complete a degree-required College course within two attempts must change major or transfer out of the College of Engineering and Computing.

A student can repeat no more than four courses from the College of Engineering and Computing in order to satisfy the requirements for any degree from the College, regardless of satisfactory work. For this purpose, withdrawal from a course with a grade of **W** is not regarded as enrollment in that course. A student not meeting these requirements must change major or transfer out of the College of Engineering and Computing.

## Departments

- Biomedical Engineering (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/biomedical-engineering/>)
- Chemical Engineering (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/chemical-engineering/>)
- Civil and Environmental Engineering (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/civil-environmental-engineering/>)
- Computer Science and Engineering (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/computer-science-engineering/>)
- Electrical Engineering (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/electrical-engineering/>)
- Integrated Information Technology (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/integrated-information-technology/>)
- Mechanical Engineering (<https://academicbulletins.sc.edu/undergraduate/engineering-computing/mechanical-engineering/>)