

# MECHANICAL ENGINEERING

Department Website ([https://www.sc.edu/study/colleges\\_schools/engineering\\_and\\_computing/departments/mechanical\\_engineering/](https://www.sc.edu/study/colleges_schools/engineering_and_computing/departments/mechanical_engineering/))

Travis Knight, *Chair*

The Department of Mechanical Engineering offers the Bachelor of Science in Engineering degree with a major in mechanical engineering. The mechanical engineer is concerned with the design, development, and manufacture of both mechanical and thermal systems. These systems may vary from the internal combustion engine to power automobiles and airplanes to the use of computer vision in biomedical and automated manufacturing applications.

The objectives of the mechanical engineering undergraduate program are: to educate students in the application of mathematics, science, and engineering principles for solving mechanical engineering problems; to develop students' professional skills that enable a successful career; and to provide students with the broad education necessary to practice engineering in a global and societal context.

These objectives are met through a curriculum that provides a strong foundation in the basic and applied sciences and in the liberal arts, with increasing emphasis on mechanical engineering topics in the junior and senior years. The curriculum also includes a wide variety of technical electives, a series of engineering laboratory courses to supplement the theory presented in lecture as well as liberal arts courses to give the mechanical engineering student a well-balanced education. A capstone senior design experience gives the student opportunities to integrate and apply the knowledge and skills learned throughout the mechanical engineering curriculum.

The department, jointly with the Department of Chemical Engineering, offers a major in biomedical engineering.

## Bachelor's/Master's Degrees Accelerated Program

The Bachelor's/Master's Degrees Accelerated Program in Mechanical Engineering allows undergraduate students to complete both the B.S.E. degree and M.E. or M.S. degree in as few as five years. The use of dual credit—courses that can be used toward both degrees—enables acceleration of the program, reducing the total enrollment of the student by one semester.

Mechanical engineering undergraduate students may apply for approval of an accelerated education plan in the semester in which they will complete 90 hours of undergraduate course work. In addition, students must have a sufficient foundation in mechanical engineering course work to enable them to take graduate-level courses. University and department regulations stipulate that applicants must have a minimum GPA of 3.40, both overall and in mechanical engineering courses. Students in the accelerated program must maintain a GPA of 3.40 while pursuing the B.S.E. degree.

Students applying to this program must submit to The Graduate School a completed "Application for Admission to a Combined Bachelor's/Master's Education Plan" with endorsements of the undergraduate advisor, the department graduate director, and the department chair. The dean of The Graduate School has final authority for approving accelerated education

plans. A "Senior Privilege Course Work Authorization" must be submitted for each semester in which one or more of these courses are taken.

Participation in the accelerated program does not require acceptance into The Graduate School. After completing the B.S.E. degree, students wishing to continue toward a master's degree in mechanical engineering at USC must apply formally to The Graduate School by submitting the appropriate form and required supporting documents. Students in the accelerated program will be eligible for graduate assistantships upon admission to The Graduate School.

Only graduate-level courses (numbered 500 and above, including up to three credit hours of project/research work leading to a master's thesis) satisfying both B.S.E. and masters degree requirements may be used for dual credit. No more than nine credit hours may be used as dual credit. The graduate courses used for dual credit must be taken during the students final undergraduate year. No more than nine credit hours (including those obtained under senior privilege and the college's Plan "M" for undergraduate juniors and seniors) may be applied toward a master's degree.