

# MECHANICAL ENGINEERING

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

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The Department of Mechanical Engineering offers programs leading to the Master of Science, Master of Engineering, and Doctor of Philosophy degrees in both mechanical engineering and nuclear engineering. The department, jointly with the Department of Chemical Engineering, offers the Master of Science and Doctor of Philosophy degrees in biomedical engineering. Degree requirements for biomedical engineering are listed under the college offerings at Biomedical Engineering.

Faculty fields of specialization include mechanics and materials, thermal and fluid sciences, dynamics and controls, design and manufacturing, sustainable systems, biomedical engineering, and nuclear engineering. Current research areas include manufacturing (cutting, joining, simulation), fracture mechanics, experimental mechanics (computer vision methods, impact/fracture/creep testing), computational mechanics, biomechanics, MEMS, nanosystems, smart materials and active sensing, structural damage detection and health monitoring, mechatronics, combustion, solidification, sustainable design, production and medical applications of radioisotopes, microstructure-property-processing relationships in high performance/high temperature ceramics and nuclear fuels, advanced reactor design, nuclear space power, and propulsion.

## 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 "Accelerated Bachelor/Graduate Study Plan Authorization (G-ABGSP)" 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 master's degree requirements may be used for dual credit. No more than 12 credit hours may be used as dual credit.