CHEMICAL ENGINEERING

Department Website (http://www.che.sc.edu/)

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The Department of Chemical Engineering offers research-oriented graduate study programs leading to the Master of Science and Doctor of Philosophy degrees in chemical engineering, as well as a program for professional development culminating in the Master of Engineering degree in chemical engineering. In addition, the department collaborates with the Department of Mechanical Engineering to offer Master of Science and Doctor of Philosophy degrees in biomedical engineering. Degree requirements for biomedical engineering are listed under the college offerings.

Advanced course work in chemical engineering has three objectives: to give students a solid foundation in core concepts at the graduate level, to prepare students for independent research in a field of specialization, and to expose students to a broad range of knowledge in chemical engineering and allied disciplines. The M.S. and Ph.D. programs emphasize independent research leading to the submission of a thesis or dissertation and publication of results in peer-reviewed technical journals. Students in the M.E. program may, at their option, propose a program of independent study, supervised by a faculty member, that may replace up to six hours of lecture courses.

In all cases, students should prepare and receive approval of a formal program of study that lists the specific courses to be used for their degree. In addition, proposals for independent study as a part of the M.E. degree program must be reviewed and approved by the faculty of the department before the work is initiated. Programs of study and plans for independent study and research should be developed in collaboration with the graduate director or the student's research advisor.

Graduates from the Department of Chemical Engineering readily find entry-level employment in engineering research, development, management, marketing, sales, production, and design. Recent graduates have assumed positions in industry, government service, and academe.

Fields of Specialization

The research interests of the faculty span all of the traditional core areas of chemical engineering and extend into many frontiers. Ongoing research may be found in fluid mechanics, heat and mass transfer, separations, kinetics and reactor design, process control, and process design. Building upon this traditional core, the department has developed more specialized research strengths in electrochemical and corrosion engineering, advanced materials, environmentally conscious manufacturing, and molecular simulations. A complete description of the current research interests of the faculty may be found in the department's brochure or on its Web page, located at http://www.che.sc.edu.

Accelerated B.S.E./Master's Education Plans

The accelerated B.S.E./master's plans in chemical engineering allows students to complete both the B.S.E. degree and a master's degree in chemical engineering 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.

Chemical engineering 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 chemical 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 chemical engineering courses. Students may apply by submitting an accelerated education plan, an application for senior privilege, and a copy of a Graduate School application to the graduate director in chemical engineering. The dean of The Graduate School has final authority for approving accelerated education plans.

Only graduate-level courses (numbered 500 and above) 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 student's final undergraduate year. The student graduates with the B.S.E. degree after completing the B.S.E. degree requirements. At that time, the student is admitted to the graduate program with up to nine hours of graduate credit.