Emphasis - Chemical Engineering

M.S. in Engineering Science

Description

The M.S. in engineering science is offered in a number of emphasis areas: aeroacoustics, chemical engineering, civil engineering, computational hydroscience, computer science, electrical engineering, electromagnetics, environmental engineering, geology, geological engineering, hydrology, mechanical engineering, material science and engineering, and telecommunications.

Minimum Total Credit Hours: 30

Course Requirements

A student must complete the requirements for an emphasis area. For most emphasis areas, the degree may be completed as a:

- Thesis option (30-hour program, to include 6 hours of thesis),
- Nonthesis option (30- hour program, to include a minimum of 3 hours of a design-oriented project course), or
- Coursework option (30-hour program, to include a final oral examination in front of a committee, but no written report)

Emphasis - Chemical Engineering

Description

A degree of M.S. in engineering science with an emphasis in chemical engineering prepares graduates to apply chemical engineering science (transport phenomena, thermodynamics, chemical reaction engineering, and applied mathematics. It enables them to independently execute complex projects and pursue successful careers in engineering, medicine, law, professional education, public policy, the military, management, and sales.

Course Requirements

The M.S. in engineering science with an emphasis in chemical engineering requires a minimum of 30 hours of graduate credit. The specific coursework depends on the M.S. option pursued by the student.

Coursework Option

All 30 hours come from graded 500-/600- level coursework agreed upon by the student and his or her committee, but must include two or more elective courses and all four of the following:

- Advanced Transport Phenomena I (Ch E 560)
- Advanced Transport Phenomena II (Ch E 561)
- Thermodynamics of Chemical Systems (Engr 665)
- Chemical Reaction and Reactor Analysis I (Engr 669)

Students whose undergraduate degree is not in chemical engineering may be required to take additional coursework at the discretion of his or her committee prior to taking Ch E 560, Ch E 561, Engr 665, or Engr 669.

Nonthesis Option

This option requires at least 27 hours of graded 500-/600- level coursework agreed upon by the student and his or her committee including two or more elective courses and all four Ch E 560, Ch E 561, Engr 665, and Engr 669. In addition, students must complete no less than 3 hours of project (Engr 693 and Engr 694) credit.

Thesis Option

Students must take 21 hours of graded 500-/600- level coursework, plus three hours of Research Seminar (Ch E 515). The coursework must include no less than 12 hours selected by the student's committee from Engr 665, Engr 669 or any Ch E course 510 or higher. The selection must be done by the end of the first semester. The remaining 9 hours of coursework are agreed upon by the student and his or her committee. All students in the M.S. thesis option must take or have taken at least one course in each of the following topics: reactors design, thermodynamics and separations as graduate or undergraduate students. In addition, students must complete no less than 6 hours of thesis (Engr 697) credit.

Other Academic Requirements

A candidate must prepare and orally defend a thesis or project.