**CHEMICAL Engineering program**

**Master of Science in Chemical Engineering (M.S.Ch.) Degree**

**DEGREE INFORMATION**

**Program Admission Deadlines:**

**Fall:** February 15

**Spring:**  October 15

**Summer:**  February 15

**Minimum Total Hours:** 30

**Program Level:** Masters

**CIP Code:** 14.0701

**Dept. Code:** ECH

**Program (Major/College):** ECH EN

**Approved:** 1981

**CONTACT INFORMATION**

**College:** Engineering

**Department:** Chemical &

 Biomedical Engineering

**Contact Information:** [www.grad.usf.edu](http://www.grad.usf.edu/)

**PROGRAM INFORMATION**

The Master of Science in Chemical Engineering degree is usually awarded to a student who has an undergraduate degree in Chemical Engineering orstrong evidence of undergraduate chemical engineering experience.

**Accreditation:**

Accredited by the Commission on Colleges of the Southern Association of College and Schools.

**Major Research Areas:**

The Chemical & Biomedical Engineering faculty research and development interesst cover a broad range of areas in reacting systems, thermodynamics, transport phenomena, systems engineering and characterization, all fundamental as well as applied in biomedical, materials including microelectronic, and environmental domains. Strong collaboration with the College of Medicine, Center of Microelectronic Research, as well as, Departments of Biology, Chemistry, Industrial Engineering, Civil Engineering, Mechanical Engineering, Electrical Engineering, and Computer Science and Engineering makes most programs in Chemical Engineering truly interdisciplinary.

The Department offers core courses in thermodynamics, transport phenomena, reacting systems, math, and process analysis and modeling. A rich variety of electives are available regularly within the department as well as the University. Chemical & Biomedical Engineering research facilities include modern laboratories for polymer synthesis and characterization, supercritical fluid technology, life sciences, process control, instrumentation, computer aided process design, and phase behavior.

**ADMISSION INFORMATION**

Must meet University requirements (see Graduate Admissions) as well as requirements listed below.

**Program Admission Requirements**

* GRE required with preferred minimum scores of Verbal >50% percentile, Quantitative > 75th percentile , and Analytical Writing of 3.0 or greater. Applicants who have successfully completed the Fundamentals of Engineering (FE) Exam offered by the Society of Professional Engineers will be exempted from the GRE requirement.
* An undergraduate Bachelor’s degree or equivalent in Chemical Engineering;
* TOEFL score of 79 (internet-based test), 213 (computer-based test) or 550 (written test)
* Two (2) letters of reference; and
* Statement of research interests.

**DEGREE PROGRAM REQUIREMENTS**

Total Minimum Program Hours: 30 hours post-bachelors

Core Requirements – 12 hours

Course Requirements – 18 hours

This degree requires an undergraduate degree in Chemical Engineering or strong evidence of undergraduate chemical engineering experience. .

A background with undergraduate chemical engineering courses is needed.

**Course Requirements – 12 hours**

ECH 6105 3 Advanced Thermodynamics **OR**

ECH 6107 3 Molecular Thermodynamics

ECH 6285 3 Advanced Transport Phenomena **OR**

BME 6634 3 Biotransport Phenomena

ECH 6515 3 Reacting Systems OR

ECH 6506 3 Chemical Engineering Kinetics

ECH 6840 3 Mathematical Methods for Chemical Engineering **OR**

ECH 6412 3 Processes Analysis and Modeling

**Additional Course Requirements – 18 hours**

Other 5000 or 6000 course or ECH 6907 Individual Study 3

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Additional approved 5000 or 6000 ECH courses 9

Must have a minimum of 16 hours at 6000 level

Must have a minimum of 12 hours of ECH 6000 level

May include a maximum of 4 hours of independent study

**Thesis Option- 6 hours minimum**

**ECH 6971 6 Thesis: Master’s**

At least 2 members of the Thesis committee must be from tenured or tenure track Chemical & Biomedical Engineering faculty. All thesis option students are required to present a departmental seminar based on their research as part of their oral examination. The examination must be scheduled after the Thesis Supervisory Committee has approved the Thesis. The Graduate Coordinator should be notified so he can coordinate the seminar scheduling. Students in this program are also required to pass the FE (Fundamentals of Engineering Examination) offered by the Society of Professional Engineers.

**Comprehensive Exam**

Candidates who have at least one publication in a journal or proceedings or presentation at a conference (based on their M.S. Thesis research) may be exempted from this comprehensive examination requirement.

Students wishing to continue on for a Ph.D. must apply to the Office of Graduate Studies.

**COURSES**

 See [http://ugs.usf.edu/course-inventory](http://www.ugs.usf.edu/sab/sabs.cfm)