

BSE Chemical Engineering / MEng Energy Systems Engineering

SUGS Program

The main objective of the Master of Engineering in Energy Systems Engineering (ESE) is to prepare engineers to design and implement energy systems for innovative applications by developing strengths in their energy discipline, acquiring breadth in relevant engineering and science, and understanding the critical role of the environment in energy systems, including economic factors. Students will also have the opportunity to acquire knowledge of basic management issues and develop their ability to lead project teams. Their experience will include a significant and industrially relevant team project experience with industry or government participation that emphasizes team building.

This Sequential Undergraduate Graduate Studies (SUGS) program allows students to complete requirements for both degrees in five years. Undergraduate students who plan to pursue a PhD should apply directly to PhD programs. Students pursuing dual degrees are not eligible to enroll in SUGS programs.

Admission:

1. **Early in their Junior year** students are expected to meet with the ESE graduate coordinator to plan for undergraduate and graduate course selections. **Students may apply as early as the second term of their Junior year** for admission into the program. Apply by January 15 for Fall term admission or September 15 for Winter term admission.
2. An overall GPA of 3.2 or above is required. A Statement of Purpose and two letters of recommendation are required. GRE scores are not required, but will be considered if provided.
3. SUGS students are required to enroll in a minimum of two terms of graduate enrollment in Graduate Engineering, paying graduate tuition.

PROGRAM REQUIREMENTS

The Master of Engineering in Energy Systems degree requires 30 hours of coursework:

- At least 24 credit hours must be *graded* (not pass/fail).
- At least 18 hours must be in technical courses at the 500 level and above.
- 15 of the graded credit hours must be in engineering courses.
- A minimum grade point average of 3.0/4.0 (B average) is required.
- Students must take at least 3 classes in the **Engineering Core** (Technical Depth) Courses (9 credits, *graded*).
- Students must also take at least two courses in **Energy Analysis** (Technical Breadth) (6 credits, *graded*) of their choosing.
- Students must take at least 3 classes in the **Energy Systems Specialties** (9 credits, *graded*). Two of these courses (6 credits, *graded*) must come from one specialty, the other (3 credits, *graded*) may come from a different specialty.
- Students must take a **seminar course** (3 credits, *graded*) and a **project course** (3 credits, *satisfactory/unsatisfactory*).

Requirements:

1. All 128 credits of Chemical Engineering BSE requirements must be met.
2. All 30 credits of MEng Energy Systems Engineering requirements must be met.
3. Up to nine hours of prior-approved coursework may be double-counted toward each of the two degrees, leading to a minimum total of:

$$128 \text{ (BSE)} + 30 \text{ (MEng)} - 9 \text{ (double-counted)} = 149 \text{ credit hours.}$$

Double-counted hours may *not* include any core courses required for the BSE degree, but may include courses elected to meet technical or general electives required for the BSE degree. An additional 6 credit hours beyond the 128 required for the BSE degree may be transferred from the undergraduate to graduate record.

See the *Sequential Undergraduate/Graduate study (SUGS) Programs for ChE Students* handout for more information regarding how SUGS works.

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For up-to-date information on the master's program, visit:
<http://isd.engin.umich.edu/degree-programs/sugs/index.htm>