MATERIALS SCIENCE & ENGINEERING: ENERGY SYSTEMS, MENG

for the joint degree of Bachelor of Science in Materials Science & Engineering and Master of Engineering in Engineering, Energy Systems Concentration

department website: https://matse.illinois.edu
department faculty: Materials Science & Engineering Faculty (https://matse.illinois.edu/directory/faculty)
overview of college admissions & requirements: The Grainger College of Engineering (https://grainger.illinois.edu/admissions)
college website: https://grainger.illinois.edu/

The joint B.S.-M.Eng. in Engineering with a Concentration in Energy Systems program combines two degrees: a B.S. in any engineering undergraduate major with the M.Eng. in Engineering with a Concentration in Energy Systems. Current Illinois students enrolled in The Grainger College of Engineering with junior standing (normally at least 90 credit hours, including those in process, and at least one year of undergraduate coursework remaining) who maintain superior academic performance are eligible to apply for this program. The program is designed to broaden a student’s knowledge beyond that possible in a standard 4-year curriculum. Students admitted to the program will receive both degrees once all requirements for both the B.S.-M.Eng. degree have been successfully completed but will be permitted to participate in the B.S. degree graduation ceremonies with their class if they have completed the equivalent number of credit hours. This program is not intended for students intending to pursue a Ph.D. degree.

Admissions

For deadlines and procedures, consult the department Web site. Current Grainger Engineering students who are in their junior year (normally at least 90 credit hours, including those in progress, and at least one year of undergraduate coursework remaining) with an overall GPA of at least 3.0 and a technical GPA 3.0 may apply for provisional admission to the program.

Admission decisions are based on overall academic performance, letters of reference, and statement of purpose.

Admissions to this program will occur both in the fall and spring term. The application deadline for spring term will be October 2 and for fall term will be June 1. The Energy and Sustainability Engineering M.Eng. admissions committee will review applications for this program and students accepted into the program will be given “provisional admission.” Students provisionally admitted to the program:

• are assigned a graduate academic advisor when admitted.
• must maintain an overall GPA of 3.0 through completion of the B.S. component of the degree to remain in the program.
• may register for graduate courses and earn graduate hours credit, with approval from their graduate academic advisor, if they have less than 12 credit hours remaining in their B.S. component.
• must earn at least 124 hours of undergraduate credit and satisfy all B.S. requirements of this program to be officially admitted to the Graduate College.

Upon successful completion of the B.S. component, students:

• must apply and be officially admitted into the Graduate College.
• will be issued letters of admission from the Graduate College and the NPRA Department, at which time they will be considered graduate students and assessed graduate tuition the following semester.
• must satisfy the graduate student minimum residence requirement, which is 24 graduate credit hours.
• must continue to maintain a graduate GPA of 3.00 or better in order to remain in the combined program.

Withdrawal

Students may withdraw from the program at any time by notifying the Office of the Associate Dean for Undergraduate Programs. Students who do not complete both the B.S.-M.Eng. degree program requirements may request by petition to have graduate hours earned converted to undergraduate hours and applied toward the student’s traditional engineering undergraduate major. Students reverting to the traditional B.S. degree program must complete 128 hours and must satisfy all degree requirements. Graduate credit not used to fulfill the B.S. degree requirements will remain on the transcript and may, at some future point, be considered for transfer to another degree program.

*The 124-hour B.S. degree from the B.S.-M.Eng. Program is not ABET accredited, but would be if the student withdrew from the M.Eng. component and completed the requirements of the traditional 128-hour B.S. program. It is noted students desiring to have their B.S. degree ABET accredited should remain in their BS (128 hours) program and apply for the M.Eng. degree in their senior year.

Requirements

B.S. Component (120 hours)

• Same required courses as the traditional B.S. degree with minimum hours reduced to 120 hours
• The reduction of 8 credit hours includes:
  • 5 hours of free electives.
  • 3 hours of the area specialty course in a different area (the latter becomes part of M.Eng. program requirements)
• At least one semester (or 2 summers) devoted to an industrial internship or co-op.2
• It is strongly suggested that the student take 2 courses in some aspect of business, economics, environmental studies, labor and industrial relations, technology entrepreneurship or technology and management as the elective component of their Liberal Education requirements. Partial or complete fulfillment of the Technology and Management or Business minor or the Technology Commercialization Certificate is recommended for those admitted by application if available hours permit. The students are expected to complete, during the combined program, at least 10 hours of courses in the areas of business, technology management and/or entrepreneurship from an approved list (available from the department), with additional hours recommended. It is noted that since receipt of the B.S. degree is delayed until the requirements for the M.Eng are completed, the student has the opportunity to complete the undergraduate minors while taking the M.Eng requirements.
• Overall GPA of 3.00 maintained through completion of B.S. component of the program and minimum residency requirements satisfied.

M.Eng. Component (minimum 36 additional hours of coursework)
• 36 hours coursework, including at least 19 graduate hours of MatSE courses with 12 hours credit overall in 500-level courses. The course work shall include MSE 585 (two semesters or equivalent, 30 weeks total, of industrial internships or co-ops; one of the semesters can be during the B.S. program), 6 hours of 400- or 500-level area specialty courses in the student’s area, 3 hours of 400- or 500- level MSE courses from a different area, 2 hours of MSE 595, and 2 hours of MSE 529 or MSE 559. Ten hours of courses in one or more of the areas of business or technology management, and entrepreneurship are required to be included in the overall program. Completion of the requirements for the various Certificates granted by the Technology Entrepreneur Center is recommended.
• MSE 492; credit does not count toward degree.

1 Students find internship companies and positions with the help of the departmental and College Placement offices. The MSE 585 internship requires approval by the departmental Director of Graduate Studies to insure that it matches the student’s individual career objectives and meets the learning goals of the program. Students taking an internship as part of their undergraduate B.S program should also check with the Director of Graduate Studies; his/her approval is required if the student is already accepted in the combined B.S./M. Eng. Program. Students will be expected to present an oral report on their internship in either MSE 529 or MSE 559, as appropriate, the semester following completion of the internship.