

BSE Chemical Engineering / MEng Plastics Engineering

SGUS Program

This program leads to a Masters of Engineering in Plastics Engineering sequentially with a Bachelors of Science in Chemical Engineering

Basic SGUS requirements

Basic requirements for this joint degree program:

1. All 128 credits of the Chemical Engineering BSE requirements must be met.
2. All 30 credits of the Plastics Engineering (M.Eng.) 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:

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

Double-counted hours may not include any core courses required for either the BSE or M.Eng. degree, but may include courses elected to meet technical or free electives for the BSE degree. At least two of the double-counted courses must be acceptable for Rackham cognate credit (non-ChE courses at the 4xx level or above). All double-counted hours must be acceptable for Rackham credit (ChE 5xx or 6xx courses, or courses in other departments at the 4xx level or above).

4. The BSE and M.Eng. degrees are awarded simultaneously upon completion of all requirements. A student who leaves the program before completion of all requirements, but who has met all BSE degree requirements, will be awarded the BSE degree.

In addition, SGUS applicants must:

- Have completed 80 or more credits of coursework with a 3.2 GPA
- Apply to the M.Eng in Plastics for admission no later than the second semester of their junior year.
- Have two plastics-related summer internships or co-op work experience (an internship planned for the summer following the application submission is acceptable with a write-up about the plan)

PLASTICS PROGRAM COURSE REQUIREMENTS

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The University of Michigan **Masters of Engineering degree in Plastics Engineering** requires a total of 30 credit hours of course work, of which at least 24 credit hours must be graded (i.e., not pass/fail), and at least 18 credit hours must be in courses at the 500 level and above. □ A minimum grade point average of 5.0/9.0 (i.e., a B average) is also required. □ The credit hours are required to be distributed in the following five categories, and the minimum credit requirements for each category are listed:

Certain courses are qualified to be used in more than one category, but no single class should be used for credit in more than one of these categories. □ Other classes may also be substituted for those specifically listed here with the permission of the program counselor.

1. □ Materials (6 credits minimum)

MSE/ChE/Macro 412. □ Polymeric Materials (3 credits)
MSE/ChE/Macro 512. □ Polymer Physics. □ (3 credits)
MSE/Macro 515. □ Mechanical Behavior of Solid Polymeric Materials. □ (3 credits)
MSE/Macro/Mfg 514. □ Composite Materials. □ (3 credits)

2. □ Mechanics (6 credits minimum)

MSE/Macro 515. □ Mechanical Behavior of Solid Polymeric Materials. □ (3 credits)
MSE/Macro/Mfg 514. □ Composite Materials. □ (3 credits)
ME 451/Mfg 453. □ Properties of Advanced Materials for Design Engineering. □ (3 credits)
ME 516/Aero 516. □ Mechanics of Fibrous Composites. □ (3 credits)
ME/AM/Macro 517. □ Theory of Linear Viscoelasticity I. □ (3 credits)
ChE 627. □ Computational Fluid Mechanics and Rheology. □ (3 credits)
ChE 629. □ Complex Fluids. □ (3 credits)
CEE 650. □ Fracture and Micromechanics of Fibrous Composites. □ (3 credits)

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3. □ Processing and Manufacturing (6 credits minimum)

MSE/Macro/Mfg 414. □ Applied Polymer Processing.
Mfg. 452. □ Design for Manufacturability (3 credits).
ME 451/Mfg 453. □ Properties of Advanced Materials for Design Engineering. □ (3 credits)
MSE 489/Mfg 489. □ Materials Process Design. □ (3 credits)
ChE 627. □ Computational Fluid Mechanics and Rheology. □ (3 credits)
ChE 629. □ Complex Fluids. □ (3 credits)

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4. □ Business Issues (3 credits minimum)

Statistics 402. □ Introduction to Statistics and Data Analysis. □ (4 credits)
Statistics 405. □ Introduction to Statistics. □ (4 credits)
Statistics 412. □ Introduction to Probability and Statistics. □ (4 credits)
Statistics 500. □ Applied Statistics I. □ (3 credits)
IOE 466. □ Statistical Quality Control. □ (3 credits)
IOE 463. □ Work Measurement and Prediction. □ (3 credits)

IOE 465. □ Design and Analysis of Industrial Experiments. □ (3 credits)
Mfg 402. □ Engineering Statistics for Manufacturing Systems. (3 credits)

5. □ Project (6 credits minimum)

Mfg 586/MSE 580. □ Materials Science and Engineering Design. □ (arranged)
MSE 690. □ Research Problems in Materials Science and Engineering. □ (arranged)
ME 698. □ Advanced Special Topics in Mechanical Engineering. □ (arranged)
ChE 698. □ Directed Study in Chemical Engineering. □ (arranged)

CONTACTS

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