MASTER OF CHEMICAL ENGINEERING (MCHE) DEGREE

Program Learning Outcomes for the MChE Degree
Upon completing the MChE degree, students will be able to:

1. Identify, formulate, and solve complex engineering problems that require synthesis of advanced knowledge in chemical engineering fundamentals.
2. Demonstrate broad advanced knowledge in science and math, and depth in one chemical engineering sub-discipline (energy engineering, biomolecular engineering, materials science).
3. Demonstrate knowledge of business policies and practices in the current business environment in identifying, formulating, and solving engineering challenges in a problem/engineering challenge they undertake to solve as part of independent study.
4. Demonstrate effective oral and written communication skills.

Requirements for the MChE Degree
The MChE degree is a non-thesis master's degree. For general university requirements, please see Non-Thesis Master's Degrees (ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-non-thesis-masters-degrees). Students pursuing the MChE degree must complete:

- A minimum of 30 credit hours at the 500-level or above with a grade of B- (2.67 grade points) or better in each course to satisfy degree requirements.
- A minimum of 24 credit hours at Rice.
- A minimum of 6 courses (18 credit hours) from departmental (CHBE) course offerings, which includes 5 CHBE core courses and 1 additional CHBE elective course.

Summary

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td></td>
<td>Total Credit Hours Required for the MChE Degree</td>
<td>30</td>
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Degree Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td></td>
<td><strong>Core Requirements</strong></td>
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<tr>
<td>CHBE 501</td>
<td>FLUID MECHANICS AND TRANSPORT PROCESSES</td>
<td>3</td>
</tr>
<tr>
<td>CHBE 590</td>
<td>KINETICS, CATALYSIS, AND REACTION ENGINEERING</td>
<td>3</td>
</tr>
<tr>
<td>CHBE 602</td>
<td>PHYSICO-CHEMICAL HYDRODYNAMICS</td>
<td>3</td>
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<tr>
<td>CHBE 611</td>
<td>ADVANCED TOPICS-THERMODYNAMICS</td>
<td>3</td>
</tr>
<tr>
<td>CHBE 692</td>
<td>APPLIED MATHEMATICS FOR CHEMICAL ENGINEERING</td>
<td>3</td>
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|          | **Elective Requirements**                     |              |

Select 5 courses at the 500-level or above. ¹

Total Credit Hours 30

Footnotes and Additional Information

¹ Upon approval of their advisor, students may substitute CHBE 692 with a comparable Math course offered by another department.
² At least 1 of the elective courses must be completed from a departmental (CHBE) course offering.

Policies for the MChE Degree
Transfer Credit
For Rice University’s policy regarding transfer credit, see Transfer Credit (ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-non-thesis-masters-degrees). Some departments and programs have additional restrictions on transfer credit. Students are encouraged to meet with their academic program’s advisor when considering transfer credit possibilities.

For additional information, please see the Chemical and Biomolecular Engineering website: https://chbe.rice.edu/

Opportunities for the MChE Degree
Professional Engineering Master’s 5th Year Degree Option for Rice Undergraduates
Rice undergraduate students have the option to earn the Master of Chemical Engineering (MChE) degree by adding an additional year after completing their bachelor’s degree. Advanced Rice undergraduate students in good academic standing may apply to the graduate program during their junior or senior year. Upon acceptance, depending on course load, financial aid status, and other variables, they may complete part of the course requirements for the MChE program during their senior year. A plan of study based on their particular focus area will need to be approved by the chair of the department graduate studies committee.

As part of this option and opportunity, Rice undergraduate students:

- must complete the requirements for their bachelor’s degree and the MChE degree independently of each other (i.e. no course may be counted toward the fulfillment of both degrees).
- should be aware of the financial aid implications, if the conversion of undergraduate coursework to that of graduate level reduces their earned undergraduate credit for any semester below that of full-time status (12 credit hours).

For additional information, please see the Chemical and Biomolecular Engineering website: https://chbe.rice.edu/