Master of Science of Industrial Engineering Online: Preparing Professionals to Face the Challenges and Take Advantage of the Opportunities of the Fourth Industrial Revolution

As we enter the Fourth Industrial Revolution, a period of time when emerging technological breakthroughs are rapidly creating new challenges as well as opportunities, we are focused on providing an up-to-date education that is relevant and useful for our students’ future work and career. Having established two national-level centers of research and education in the department, the faculty’s collective expertise provides our students with multidisciplinary skills to take advantage of the opportunities related to the design, operation and management of the next generation of smart industrial, service and healthcare systems.

The program aims to provide the students with the necessary concepts and tools — such as those in the architecture of smart industrial and service systems, analytical and simulation modeling, big data analytics and smart devices, energy and environmental management — that will put our students on a fast-track career in the new technological and business environment.

Degree Requirements

The Master of Science in Industrial Engineering (MS) degree consists of two options: a 30-credit hour research oriented program requiring a thesis or a 30-credit hour application oriented program requiring a project report. The MS Industrial Engineering thesis option curriculum is built upon the choice of a concentration area around which students can mold their overall academic effort including six hours of research. The current focus areas are Data Analytics and Operations Research, Manufacturing and Production Systems, Sustainable Systems Engineering, Service and Supply Chain Systems, and Healthcare and Human-centered Systems. The MS Industrial Engineering project option requires three hours of an approved project advised by a faculty member in lieu of a thesis, and one more course.

Required Courses (12 credit hours)

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>IMSE 8030</td>
<td>Advanced Manufacturing and Supply Systems</td>
<td>3</td>
</tr>
<tr>
<td>IMSE 8110</td>
<td>Design and Analysis of Engineering Experiments</td>
<td>3</td>
</tr>
<tr>
<td>IMSE 8410</td>
<td>Advanced Computational Systems and Data Engineering</td>
<td>3</td>
</tr>
<tr>
<td>IMSE 8085</td>
<td>Problems in Industrial and Manufacturing Systems Engineering</td>
<td>1-99</td>
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Electives (18 credit hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>IMSE 7220</td>
<td>Optimization Modeling and Computational Methods</td>
<td>3</td>
</tr>
<tr>
<td>IMSE 7350</td>
<td>Production and Operations Analysis</td>
<td>3</td>
</tr>
<tr>
<td>IMSE 7370</td>
<td>Service Systems Engineering and Management</td>
<td>3</td>
</tr>
<tr>
<td>IMSE 7580</td>
<td>Industrial Energy Efficiency and Management</td>
<td>3</td>
</tr>
<tr>
<td>IMSE 8310</td>
<td>Advanced Integrated Production Systems</td>
<td>3</td>
</tr>
<tr>
<td>IMSE 8370</td>
<td>Supply Chain Modeling and Analysis</td>
<td>3</td>
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Admissions

For more information regarding the program and application, please see: https://online.missouri.edu/degreeprograms/engineering/industrial/masters/

You can also contact the Program Director, Dr. Bin Wu, directly at: wubi@missouri.edu.

Application Deadlines

Applications accepted throughout the year.
Fall application deadline: March 1 (Priority deadline: January 1)
Spring application deadline: September 15

Minimum Admission Criteria

- Minimum GPA: 3.0/4.0
- Test of Written English: (TWE) of 4.0 (international applicants only)
- Minimum Academic IELTS OVERALL score: 6.0; or Minimum TOEFL scores:
  - Internet-based test (iBT): 80
  - Paper-based test (PBT): 550
- Minimum GRE scores:
  - Prior to August 1, 2011: Verbal 350, Quantitative 700
  - On or After August 1, 2011: Verbal 143, Quantitative 155
- Foreign Language: No foreign language is required in either program.

Required Application Materials

To the Graduate School:
- All required Graduate School documents

To the IMSE Graduate Program:
- 3 letters of recommendation
- Statement of Purpose
- Curriculum Vitae (CV)
- GRE scores (Note: GRE is waived for applicants who have graduated from an ABET-accredited institution.)

Admission Contact Information

Luis G. Occeña, Interim Director of Graduate Studies
E3437 Thomas and Nell Lafferre Hall
Columbia, MO 65211
(573) 882-2691

TA/RA Hiring

This academic department does not have any function of financial Aid. Rather, IMSE hires TA/RA automatically based on the department needs. No separate application or contacts are necessary; all top ranked applicants will be considered.