M.S. in Manufacturing Engineering

Admission Requirements

Students should consult the College of Engineering section in the Graduate Catalog for information on general admission requirements. Applicants are expected to have a Bachelor of Science degree in Industrial and Systems Engineering or a related field from an ABET accredited institution in the United States, or proof of equivalent education from an international institution.

Students apply through the Graduate School, submitting an application form and the following supporting materials:

- Official transcripts of all previous academic work.
- Applicants from countries where English is not the first language are required to demonstrate English proficiency. Please consult the graduate school (http://catalog.utep.edu/admissions/graduate/graduate-student/) website for required scores.
- Personal Statement of Purpose
- Two letters of Recommendation

General Degree Requirements

All students follow a 30 credit hour program that is composed of (15) credit hours of core coursework and (6) credit hours of approved graduate level coursework in areas outside the Industrial, Manufacturing and Systems Engineering Department. For students following the Thesis option, there is a requirement to take six (6) credit hours of thesis and (3) credit hours from the Industrial, Manufacturing and Systems Engineering department. For students following the Non-Thesis option, there is a requirement to take (9) additional credit hours of coursework from the Industrial, Manufacturing and Systems Engineering department.

No more than six (6) semester hours of approved upper-level undergraduate coursework can be used to satisfy the degree requirements in the Industrial and Manufacturing Engineering programs. All coursework must be approved by the student's academic advisor and by the Graduate School. Specific requirements for each master's program are available from the Industrial Engineering Program.

Degree Requirements Summary

<table>
<thead>
<tr>
<th></th>
<th>Thesis Option (in credit-hours)</th>
<th>Non Thesis Option (in credit-hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core MFG coursework</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Graduate IMSE Electives*</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Graduate Electives**</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Thesis</td>
<td>6 (MFG 5398 and MFG 5399)</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

*At most, six (6) credit hours of approved senior-level undergraduate coursework, and, at most, three (3) credit hours of Individual Studies can be included in the degree plan.

**At most six (6) hours of approved graduate level coursework in areas outside the Industrial, Manufacturing and Systems Engineering Department can be included in the degree plan. IMSE Department courses can be used to satisfy the Graduate Electives requirement.

All coursework must be approved by the department's graduate program director. All courses listed in the degree plan require a grade of C or better for successful completion. A minimum GPA of 3.0 is required for graduation.
# Degree Plan

Required Credits: 30

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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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## MS in Manufacturing Engineering (All courses require a grade of C or better)

### Core MFG Coursework

Select fifteen hours of the following: 15

- MFG 5311 Design for Manufacturability
- MFG 5312 Strategic Design-Mfg Processes
- MFG 5314 Robotics & Flexible Automation
- MFG 5315 Analysis-Matl Handling System
- MFG 5321 Modeling/Analysis-Mfg Process
- MFG 5350 Reliability & Maintainability
- MFG 5358 Industrial Data Analytics
- MFG 5359 Computer-Aided Manufacturing
- MFG 5389 Green Energy Manufacturing
- MFG 5390 Special Topics
- MFG 5391 Individual Studies
- MFG 5394 Graduate Research

### Non-Thesis Graduate IMSE Electives

Select nine additional hours of graduate IE, MFG or SE courses: 9

- IE 5195 Graduate Seminar
- IE 5341 Adv Production/Inven Control
- IE 5351 Linear and Combin Optimiz Meth
- IE 5352 Design/Analysis Indust Exprmnt
- IE 5357 Computer Simulation Appli
- IE 5385 Advanced Quality Control
- IE 5390 Special Topics Industrial Engr
- IE 5391 Individual Studies
- MFG 5311 Design for Manufacturability
- MFG 5312 Strategic Design-Mfg Processes
- MFG 5314 Robotics & Flexible Automation
- MFG 5315 Analysis-Matl Handling System
- MFG 5321 Modeling/Analysis-Mfg Process
- MFG 5350 Reliability & Maintainability
- MFG 5358 Industrial Data Analytics
- MFG 5359 Computer-Aided Manufacturing
- MFG 5389 Green Energy Manufacturing
- MFG 5390 Special Topics
- MFG 5391 Individual Studies
- MFG 5394 Graduate Research
- SE 5341 Systems Engr Fundamentals
- SE 5342 Systems Engr Management
- SE 5343 Systems Requirements Analysis
- SE 5344 Sys Intgrtn, Verfctn, & Valdtn
- SE 5346 Systems Architecture & Design
- SE 5347 Systems Engr Processes
- SE 5348 Systems Modeling & Simulation

### Thesis Graduate Electives

Select six additional hours of graduate courses from the College of Engineering, Science or Business 6

<table>
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<tr>
<th>Code</th>
<th>Title</th>
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</table>

**Total Hours** 30