MANUFACTURING SYSTEMS ENGINEERING GRADUATE OPTION

This option is offered within the following major(s):

- Industrial Engineering - College of Engineering (http://catalog.oregonstate.edu/college-departments/engineering/school-mechanical-industrial-manufacturing-engineering/industrial-engineering-meng-ms-phd-mais)

This graduate option within the Industrial Engineering major distinguishes an area of specialization within the broader discipline of industrial engineering. Manufacturing Systems Engineering (MSE) focuses on the development of reliable, economically competitive, and environmentally benign manufacturing processes and systems. Topical areas include operations research, computer integrated manufacturing, environmentally responsible manufacturing, simulation, and statistical quality engineering.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>IE 521</td>
<td>INDUSTRIAL SYSTEMS OPTIMIZATION I</td>
<td>3</td>
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<tr>
<td>or IE 522</td>
<td>INDUSTRIAL SYSTEMS OPTIMIZATION II</td>
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<tr>
<td>IE 563</td>
<td>ADVANCED PRODUCTION PLANNING AND CONTROL</td>
<td>3</td>
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Select 6 or more credits of the following:

- IE 512 INFORMATION SYSTEMS ENGINEERING
- IE 515 SIMULATION AND DECISION SUPPORT SYSTEMS
- IE 545 HUMAN FACTORS ENGINEERING
- IE 564 DESIGN AND SCHEDULING OF CELLULAR MANUFACTURING SYSTEMS
- ME 515 RISK AND RELIABILITY ANALYSIS IN ENGINEERING DESIGN
- ME 516 MODELING AND ANALYSIS OF COMPLEX SYSTEMS
- ME 517 OPTIMIZATION IN DESIGN
- MFGE 536 LEAN MANUFACTURING SYSTEMS ENGINEERING

Total Hours 12

Option Code: 3196