INDUSTRIAL AND SYSTEMS ENGINEERING

Program Information
The Department of Industrial and Systems Engineering offers the Master of Engineering degree, the Master of Science degree, the Engineer degree, and the Doctor of Philosophy degree. Complete descriptions of the minimum requirements for the M.E., M.S., Engineer, and Ph.D. degrees are provided in the Graduate Degrees (http://catalog.ufl.edu/graduate/degrees/) section of this catalog.

Master of Science (M.S.) Program
Admission to the Master of Science program is open to students with an undergraduate degree in engineering, mathematics, statistics, computer science, physics, quantitative management, or similar field. The M.S. degree does not require a thesis, although a student interested in pursuing research or possibly continuing their education beyond a master's degree is encouraged to write one.

Master of Engineering (M.E.) Program
Students seeking admission to the Master of Engineering program must have a bachelor's degree from an ABET-accredited curriculum or have taken sufficient articulation course work to meet the minimum requirements specified by ABET. The M.E. degree does not require a thesis and is generally considered a terminal degree.

Ph.D. Program
The doctoral program in Industrial and Systems Engineering covers the areas of data analytics, health systems engineering, human-systems engineering, operations research (including deterministic and stochastic processes), risk management and financial engineering, and supply chain and logistics systems. Application areas include energy systems, financial engineering, healthcare, manufacturing systems, security systems, supply chain management, and transportation systems.

For more information, please see our website: http://www.ise.ufl.edu.

Degrees Offered

Degrees Offered with a Major in Industrial and Systems Engineering
- Doctor of Philosophy
  - without a concentration
  - concentration in Quantitative Finance
- Master of Engineering
- Master of Science

Requirements for these degrees are given in the Graduate Degrees (http://catalog.ufl.edu/graduate/degrees/) section of this catalog.

Courses

Industrial and Systems Engineering Departmental Courses

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EGN 5949</td>
<td>Practicum/Internship/Cooperative Work Experience</td>
<td>1-6</td>
</tr>
<tr>
<td>EGN 6640</td>
<td>Entrepreneurship for Engineers</td>
<td>3</td>
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College of Engineering Courses

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<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>ECI 5354L</td>
<td>Semiconductor Device Fabrication Laboratory</td>
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<td>EGN 5010L</td>
<td>NRF Training Lab</td>
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<tr>
<td>EGN 5949</td>
<td>Practicum/Internship/Cooperative Work Experience</td>
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<td>EGN 6640</td>
<td>Entrepreneurship for Engineers</td>
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<td>EGN 6642</td>
<td>Engineering Innovation</td>
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<td>EGN 6913</td>
<td>Engineering Graduate Research</td>
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<td>EGN 6933</td>
<td>Special Topics</td>
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<td>EGN 6937</td>
<td>Engineering Fellowship Preparation</td>
<td>0-1</td>
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<td>EGS 6039</td>
<td>Engineering Leadership</td>
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EGS 6101  Divergent Thinking  3
EGS 6626  Fundamentals of Engineering Project Management  3
EGS 6628  Advanced Practices in Engineering Project Management  3
EGS 6681  Advanced Engineering Leadership  3
EMA 6581  Polymeric Biomaterials  3
ESI 6900  Principles of Engineering Practice  1-4

**Student Learning Outcomes**

**Industrial and systems engineering (PHD)**

**SLO 1  Knowledge**
Basic proficiency in the core methodological areas of operations research and industrial engineering, including mathematical modeling and optimization theory and algorithms

**SLO 2  Professional Behavior**
Ability to effectively and professionally communicate industrial engineering concepts and information in lecture format

**SLO 3  Skills**
Ability to assimilate foundational material, describe important research contributions, and independently plan future research activities that advance the state-of-the-art in the student’s field of expertise

**SLO 4  Knowledge**
Contribution of significant new research to the student’s field of expertise, either in theoretical foundations or practical applications

**Industrial & Systems Engineering (Me & MS)**

**SLO 1  Knowledge**
Proficiency in the core methodological areas of operations research and industrial engineering, including mathematical modeling and analysis of business problems

**SLO 2  Skills**
Ability to apply methodology in the customized development of solutions for business problems, and the use of information technologies for solution delivery

**SLO 3  Professional Behavior**
Ability to effectively and professionally communicate industrial engineering concepts and information in written and oral forms