SERVICE ENTERPRISE ENGINEERING, MINOR

Requirements for a minor may be completed at any campus location offering the specified courses for the minor. Students may not change from a campus that offers their major to a campus that does not offer their major for the purpose of completing a minor.

Program Description
Service sector represents over 80% of the economy and represents over 70% of jobs in the U.S. Service enterprises constitute a wide range in terms of labor intensity, information intensity, and prevailing productivity. Examples of service enterprises include hospitals, retailers, banks, financial institutions, and airlines. This minor is designed for students interested in learning about applying industrial engineering techniques to service enterprises. Students completing this minor will gain an understanding of applying industrial engineering and operations research tools for modeling, analysis, design and control of service enterprises.

In addition to the stated courses for the minor, students in IE pursuing this minor may be required to take the prerequisites for the courses listed for the Service Cluster. Students in HPA, HDFS and any other major will require MATH 220 as a prerequisite for IE 405. IE 405 and IE 322 (or an equivalent course in probability and statistics) are prerequisites for IE 460.

What is Service Enterprise Engineering?
Service Enterprise Engineering is the study, design, and implementation of new systems that improve the processes and efficiencies of the service sector, in which 80 percent of the U.S. workforce is employed. The minor answers a critical need for operational expertise in health care and human service fields. Students completing this minor will gain an understanding of applying industrial engineering and operations research tools for modeling, analysis, design and control of service enterprises.

You Might Like This Program If...
Most applicable for those students in industrial engineering, health policy administration, and human development and family studies, this minor gives students the ability to apply industrial engineering techniques to processes in hospitals, nonprofit organizations, retailers, banks, financial institutions, airlines, and more.

Program Requirements

<table>
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<tr>
<th>Requirement</th>
<th>Credits</th>
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<tr>
<td>Requirements for the Minor</td>
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Requirements for the Minor
A grade of C or better is required for all courses in the minor, as specified by Senate Policy 59-10 (https://senate.psu.edu/policies-and-rules-for-undergraduate-students/59-00-minors-and-certificates/#59-10). In addition, at least six credits of the minor must be unique from the prescribed courses required by a student’s major(s).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>IE 460</td>
<td>Service Systems Engineering</td>
<td>3</td>
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Select 6 credits from the Service Cluster:
- HDFS 311 Human Development and Family Studies Interventions
- HDFS 455 Development and Administration of Human Services Programs
- HPA 332 Health Systems Management
- HPA 433 Administration of Hospital and Health Service Systems
- HPA 442 Long-Term Care Management
- HPA 475 Health Care Quality

Select 6 credits from the Engineering Cluster:
- IE 302 Engineering Economy
- IE 322 Probabilistic Models in Industrial Engineering
- IE 323 Statistical Methods in Industrial Engineering
- IE 330 Engineering Analytics
- IE 402 Advanced Engineering Economy
- IE 405 Deterministic Models in Operations Research
- or MATH 484 Linear Programs and Related Problems

Additional Courses: Require a grade of C or better

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<th>Title</th>
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<tr>
<td>Retail Services Engineering</td>
<td>3</td>
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<tr>
<td>Probabilistic Models in Industrial Engineering</td>
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<td>Statistical Methods in Industrial Engineering</td>
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<td>Linear Programs and Related Problems</td>
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<td>Process Quality Engineering</td>
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<td>Facility Layout and Location</td>
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<td>Optimization Modeling and Methods</td>
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<td>Capstone Design Project</td>
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Academic Advising
The objectives of the university's academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of-class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee’s unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (https://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy/)

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Career Paths
Over 60 percent of graduating industrial engineering students have started their careers in the service sector. Industries that have hired include consulting, retailing, supply chain, logistics, distribution, transportation, government, entertainment, financial analyst, revenue management, and health care services.

Contact
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http://www.ime.psu.edu/index.aspx (http://www.ime.psu.edu/