## INDUSTRIAL ENGINEERING AND MANAGEMENT, BSIE

Requirements for Students Matriculating in or before Academic Year 2021-2022. Learn more about University Academic Regulation 3.1 (http://catalog.okstate.edu/university-academic-regulations/#matriculation).

Minimum Overall Grade Point Average: 2.00
Total Hours: 123

### Code | Title | Hours
--- | --- | ---
ENGL 1113 | Composition I $^1$ | 3
or ENGL 1313 | Critical Analysis and Writing I | 3
ENGL 3323 | Technical Writing | 3

### American History & Government

POLS 1113 | American Government | 3
Select one of the following: 3
- HIST 1103 | Survey of American History |
- HIST 1483 | American History to 1865 (H) |
- HIST 1493 | American History Since 1865 (DH) |

### Analytical & Quantitative Thought (A)

MATH 2144 | Calculus I (A) | 4
MATH 2153 | Calculus II (A) | 3
MATH 2163 | Calculus III | 3
or MATH 2233 | Differential Equations | 3

### Humanities (H)

Courses designated (H) | 6
Natural Sciences (N)
Must include one Laboratory Science (L) course

CHEM 1414 | General Chemistry for Engineers (LN) | 4
or CHEM 1515 | Chemistry II (LN) | 4
PHYS 2014 | University Physics I (LN) | 4
PHYS 2114 | University Physics II (LN) | 4

### Social & Behavioral Sciences (S)

SPCH 2713 | Introduction to Speech Communication (S) | 3

### Hours Subtotal

43

### Diversity (D) & International Dimension (I)

May be completed in any part of the degree plan
Select at least one Diversity (D) course
Select at least one International Dimension (I) course

### College Requirements

#### Basic Science

**Engineering**

ENGR 1111 | Introduction to Engineering | 1
ENGR 1322 | Engineering Design with CAD | 2
or ENGR 1332 | Engineering Design with CAD for MAE |
ENGR 1412 | Introductory Engineering Computer Programming | 2

### Engineering Science

ENSC 2113 | Statics | 3
Select two of the following: 6
- ENSC 2123 | Elementary Dynamics |
- ENSC 2143 | Strength of Materials |
- ENSC 2213 | Thermodynamics |
- ENSC 2613 | Introduction to Electrical Science |
- ENSC 3233 | Fluid Mechanics |

### Hours Subtotal

14

### Major Requirements

#### Mathematics

MATH 3013 | Linear Algebra (A) | 3

#### Engineering Science

ENSC 3313 | Materials Science | 3

#### Industrial Engineering & Management

IEM 2903 | Introduction to Industrial Engineering | 3
IEM 3103 | Probability and Statistics for Engineers I | 3
IEM 3303 | Manufacturing Processes | 3
IEM 3403 | Engineering Project Management | 3
IEM 3503 | Engineering Economic Analysis | 3
IEM 3523 | Engineering Cost Information and Control Systems | 3
IEM 3703 | Probability and Statistics for Engineers II | 3
IEM 3713 | Software Programming for Data Analytics | 3
IEM 3813 | Work Design, Ergonomics, and Human Performance | 3
IEM 4013 | Operations Research | 3
IEM 4103 | Quality Control and Reliability Analysis | 3
IEM 4113 | Industrial Experimentation | 3
IEM 4203 | Facilities and Material Handling System Design | 3
IEM 4613 | Production Planning and Control Systems | 3
IEM 4623 | Supply Chain and Logistics | 3
IEM 4713 | Systems Simulation Modeling | 3
IEM 4723 | Information Systems Design and Development | 3
IEM 4913 | Senior Design Projects | 3
Select 6 hours of the following: 6
- IEM 4163 | Service Systems and Processes |
- IEM 4783 | Applied Statistical Analysis in R for Engineers |
- IEM 4953 | Industrial Assessment and Improvement |
- IEM 4990 | Selected Topics in Industrial Engineering and Management (3) |
Any 3000/4000 level CEAT course Requires advisor approval

### Hours Subtotal

66

### Total Hours

123
If a "B" or higher is not earned in ENGL 1113 Composition I or ENGL 1313 Critical Analysis and Writing I, then ENGL 1213 Composition II or ENGL 1413 Critical Analysis and Writing II is also required (per Academic Regulation 3.5 (http://catalog.okstate.edu/university-academic-regulations/)).

Other Graduation Requirements

a. A minimum Technical GPA of 2.00. The Technical GPA is calculated from all courses counting in the curriculum with an IEM prefix, or substitutions for these courses.

b. A grade of 'C' or better is required in each course that is a prerequisite to another required course and also in MATH 2163/MATH 2233 and PHYS 2114.

These courses include:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1414</td>
<td>General Chemistry for Engineers (LN)</td>
<td>4-5</td>
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<tr>
<td>or CHEM 1515</td>
<td>Chemistry II (LN)</td>
<td></td>
</tr>
<tr>
<td>ENGR 1111</td>
<td>Introduction to Engineering</td>
<td>1</td>
</tr>
<tr>
<td>ENGR 1322</td>
<td>Engineering Design with CAD</td>
<td>2</td>
</tr>
<tr>
<td>or ENGR 1332</td>
<td>Engineering Design with CAD for MAE</td>
<td></td>
</tr>
<tr>
<td>ENGR 1412</td>
<td>Introductory Engineering Computer Programming</td>
<td>2</td>
</tr>
<tr>
<td>ENSC 2113</td>
<td>Statics</td>
<td>3</td>
</tr>
<tr>
<td>ENSC 3313</td>
<td>Materials Science</td>
<td>3</td>
</tr>
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</tr>
<tr>
<td>IEM 3503</td>
<td>Engineering Economic Analysis</td>
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</tr>
<tr>
<td>IEM 3703</td>
<td>Probability and Statistics for Engineers II</td>
<td>3</td>
</tr>
<tr>
<td>IEM 4013</td>
<td>Operations Research</td>
<td>3</td>
</tr>
</tbody>
</table>

c. The major engineering design experience is satisfied by IEM 4913 Senior Design Projects.

Additional State/OSU Requirements

- At least: 60 hours at a four-year institution; 30 hours completed at OSU; 15 of the final 30 or 50% of the upper-division hours in the major field completed at OSU.
- Limit of: one-half of major course requirements as transfer work; one-fourth of hours earned by correspondence; 8 transfer correspondence hours.
- Students will be held responsible for degree requirements in effect at the time of matriculation and any changes that are made, so long as these changes do not result in semester credit hours being added or do not delay graduation.

- Degrees that follow this plan must be completed by the end of Summer 2027.