Industrial and Systems Engineering Graduation Requirements
University of Washington
https://ise.washington.edu

**Requirement Sheet Key**

◆ = Upper-Division Admission Requirements

**Mathematics - (24 Credits)**

◆ MATH 124 (5cr) - Calculus I
◆ MATH 125 (5cr) - Calculus II
◆ MATH 126 (5cr) - Calculus III
◆ MATH 307 (3cr) - Differential Equations
◆ MATH 308 (3cr) - Matrix Algebra

*(AMATH 351/352 may substitute MATH 307/308)*

IND E 315 (3cr) - Probability & Statistics for Engrs.

**Natural Sciences - (25 Credits)**

◆ CHEM 142 (5cr) - General Chem I with Lab
◆ CHEM 152 (5cr) - General Chem II with Lab
◆ PHYS 121 (5cr) - Mechanics with Lab
◆ PHYS 122 (5cr) - Electro/Oscillatory with Lab
◆ PHYS 123 (5cr) - Waves with Lab

**Written & Oral Communications - (8 Credits)**

◆ English Comp (5cr) - English Composition
◆ ENGR 231 (3cr) - Intro to Technical Writing

Additional Composition will be done in IND E 337

**Visual, Literary & Performing Arts/Individuals & Society (VLPA/I&S) - (30 Credits)**

10 credits of VLPA
10 credits of I&S
10 credits of VLPA or I&S
3 credits of Diversity (DIV)
*(DIV can overlap with VLPA or I&S)*

**Engineering Fundamentals - (28 Credits)**

AA 210 (4cr) – Engineering Statics *(pr: Math 126, PHYS 121]*
ME 230 (4cr) – Kinematics & Dynamics *(pr: AA 210]*
CSE 142 (4cr) – Computer Programming I
MSE 170 (4cr) – Fund. of Material Science *(pr: CHEM 152]*
EE 215 (4cr) – Fund. of EE *(pr: PHYS 122 & MATH 126]*
IND E 250 (4cr) – Fundamentals of Engineering Economy

**IND E Core Courses - (24 Credits)**

IND E 316 (4cr) - Design of Experiments
IND E 337 (4cr) - Intro to Manufacturing Systems
IND E 410 (4cr) - Linear & Network Programming
IND E 411 (4cr) - Stochastic Models & Decision Analysis
IND E 494 (4cr) - Design in the Manufacturing Firm
IND E 495 (4cr) - Industrial Engineering Design

**Technical Electives - (37 Credits)**

Complete a minimum of 37 credits, including AT LEAST one course from EACH of the following 5 categories:

- Operations Research: IND E 412, IND E 424
- Statistics: IND E 321, IND E 426
- Production/Operations: IND E 430, IND E 439
- Design: IND E 351, IND E 455
- General Engineering: AA 260 or CSE 143

*Note: See IND E adviser for additional technical electives on approved list.*

**Total Credits Required for Graduation - (180 credits)**

**Early Admission Requirements**

1. Early Admission is an option for Autumn Quarter only.
2. Students must be enrolled at UW Seattle.
3. MATH 124, 125 & 126 or equivalent.
4. 10 credits of physical science courses plus accompanying lab at the level of CHEM 142, 152; PHYS 121, 122, 123.
5. 5 credits of English composition.
6. 15 credits must have been completed at UW.

**Application Deadlines**

Early Admission and Upper-Division - July 1st

Last revised August 2017
**This is a sample four-year plan. It is intended to provide a framework for students to reference as they create their own individual academic plan.**

<table>
<thead>
<tr>
<th>Freshman - Autumn Quarter</th>
<th>Freshman - Winter Quarter</th>
<th>Freshman - Spring Quarter</th>
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<tbody>
<tr>
<td>Math 124 - Calculus I</td>
<td>Math 125 - Calculus II</td>
<td>Math 126 - Calculus III</td>
</tr>
<tr>
<td>Chem 142 - Chem &amp; Lab I</td>
<td>Chem 152 - Chem &amp; Lab II</td>
<td>Phys 121 - Mechanics &amp; Lab</td>
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<td>English Composition</td>
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<td>CSE 142 - Comp. Programming I</td>
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Quarter Total 15

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<thead>
<tr>
<th>Sophomore - Autumn Quarter</th>
<th>Sophomore - Winter Quarter</th>
<th>Sophomore - Spring Quarter</th>
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<tbody>
<tr>
<td>PHYS 122 - Electro &amp; Lab II</td>
<td>PHYS 123 - Waves &amp; Lab III</td>
<td>IND E 250 - Engineering Economy</td>
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<tr>
<td>A A 210 - Engineering Statics</td>
<td>MATH 308 - Matrix Algebra</td>
<td>ME 230 - Kinematics &amp; Dynamics</td>
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<td>VLPA/I&amp;S</td>
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Quarter Total 15

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<thead>
<tr>
<th>Junior - Autumn Quarter</th>
<th>Junior - Winter Quarter</th>
<th>Junior - Spring Quarter</th>
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<tbody>
<tr>
<td>IND E 410 - Applied Linear Prog.</td>
<td>IND E 316 - Design of Experiments</td>
<td>IND E Technical Elective</td>
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<tr>
<td>IND E Technical Elective</td>
<td>ENGR 231 - Intro to Tech. Writing</td>
<td>IND E Technical Elective</td>
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Quarter Total 15

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<thead>
<tr>
<th>Senior - Autumn Quarter</th>
<th>Senior - Winter Quarter</th>
<th>Senior - Spring Quarter</th>
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<tbody>
<tr>
<td>IND E Technical Elective</td>
<td>IND E 494 - Design in Manuf. Firm</td>
<td>IND E 495 - Senior Design</td>
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<td>VLPA/I&amp;S</td>
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<tr>
<td>Elective</td>
<td>Elective</td>
<td>Elective</td>
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</tbody>
</table>

Quarter Total 16

**Bold face** courses are required for upper-division admission. See IND E website for list of technical electives.

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