# Industrial and Systems Engineering Graduation Requirements

**University of Washington**
dep.ts.washington.edu/ie

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### 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 [pr: Math 125]
- Math 308 (3cr) – Matrix Algebra [pr: Math 126]
- Ind E 315 (3cr) – Prob. and Stat. for Engineers [pr: Math 307]
- (AMATH 351/352 may substitute for Math 307/308)

### Sciences

**25 Credits**

- Chem 142 (5cr) – General Chemistry with lab
- Chem 152 (5cr) – General Chemistry with lab
- Phys 121 (5cr) – Mechanics with lab [pr: Math 124]
- Phys 122 (5cr) – Electro/Oscillatory with lab [pr: Math 125]
- Phys 123 (5cr) – Waves with lab [pr: Math 126]

### Written & Oral Communications

**12 Credits**

- English Comp (5cr) – English Composition
- HCDE 231 (3cr) – Intro to Technical Writing [pr: Engl. Comp]

Additional writing will be done in IndE 337

### Visual, Literary & Performing Arts/ Individuals & Society (VLPA/I&S)

**30 Credits**

Minimum 10 credits in VLPA required.

Minimum 10 credits in I&S required.

Remaining 10 credits can be either VLPA or I&S.

Minimum 3 credits in Diversity (DIV) required.

### Engineering Fundamentals

**28 Credits**

- CSE 142 (4cr) – Computer Programming I
- MSE 170 (4cr) – Fund. of Material Science [pr: CHEM 152]
- AA 210 (4cr) – Engineering Statics [pr: Math 126, PHYS 121]
- CEE 220 (4cr) – Intro to Mech. of Materials [pr: AA 210]
- ME 230 (4cr) – Kinematics & Dynamics [pr: AA 210]
- 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 [pr: IND E 315]
- IND E 337 (4cr) – Intro to Manufacturing Systems
- IND E 410 (4cr) – Linear & Network Programming [pr: MATH 308 & CSE 142]
- IND E 411 (4cr) – Stochastic Models & Decision Analysis [pr: IND E 315 & IND E 410]
- IND E 494 (4cr) – Design in the Manufacturing Firm [pr: IND E 337]
- IND E 495 (4cr) – Industrial Engr. Design [pr: IND E 494]

### Technical Electives

**Min. 37 Credits**

Complete min. 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, CSE 143

Additional technical electives may be chosen from the approved Tech. Elective List. See IND E Adviser.

### Total Credits Required for Graduation

**180 Credits**

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### 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 sciences courses plus the 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 – July 1st
- Upper Division Admission – July 1st

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Last revised November 2015
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<th>Quarter</th>
<th>Course Details</th>
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<tr>
<td>Freshman – Autumn</td>
<td>Math 124 – Calculus I</td>
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<tr>
<td></td>
<td>✷ Chem 142 – Chem &amp; Lab I</td>
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<td>✷ English Composition</td>
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<td>IND E 101 – Intro to ISE</td>
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<td>✷ Chem 152 – Chem &amp; Lab II</td>
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<td>✷ Math 126 – Calculus III</td>
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<td>VLPA/I&amp;S</td>
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<td>✷ Phys 121 – Mechanics &amp; Lab I</td>
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<td>CSE 142 – Comp Programming I</td>
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**Bold face** courses are required for upper-division admission.
See IND E Advising Guide for list of technical electives.

For more information contact:
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-or-

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