### Industrial and Systems Engineering Graduation Requirements

**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
- ENGR 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]
- 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 or 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)

#### 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

Last revised December 2016
# Industrial and Systems Engineering Graduation Requirements

**University of Washington**
depts.washington.edu/ie

<table>
<thead>
<tr>
<th>Freshman – Autumn Quarter</th>
<th>Freshman – Winter Quarter</th>
<th>Freshman – Spring Quarter</th>
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<tr>
<td>◆ Math 124 – Calculus I 5</td>
<td>◆ Math 125 – Calculus II 5</td>
<td>◆ Math 126 – Calculus III 5</td>
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<tr>
<td>◆ Chem 142 – Chem &amp; Lab I 5</td>
<td>◆ Chem 152 – Chem &amp; Lab II 5</td>
<td>◆ Phys 121 – Mechanics &amp; Lab I 5</td>
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<td>◆ English Composition 5</td>
<td>VLPA/I&amp;S</td>
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<td>ENGR 231 – Tech Writing 3</td>
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<tr>
<td>IND E 337 – Intro Manufact Syst. 4</td>
<td>IND E 411 – Nonlin &amp; Stoch Mdl 3</td>
<td>EE 215 – Fundamentals of EE 4</td>
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<td>IND E 410 – Applied Linear Prog. 4</td>
<td>IND E 316 – Design of Experiments 4</td>
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<tr>
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<td>IND E 494 – Design/Manuf Firm 4</td>
<td>IND E 495 – Senior Design 4</td>
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**Bold face** courses are required for upper-division admission.

See IND E Advising Guide for list of technical electives.

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**For more information contact:**

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—or—

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