# Materials Science and Engineering Graduation Requirements

University of Washington
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## Requirement Sheet Key

♦ = Upper-Division Admission Requirements

## Mathematics

### Core Courses (24 Credits)

- MSE 310 (3cr) – Intro to Material Science & Engineering
- MSE 311 (2cr) – Integrated Junior Lab I
- MSE 312 (2cr) – Integrated Junior Lab II
- MSE 313 (2cr) – Integrated Junior Lab III
- MSE 321 (4cr) – Thermodynamics and Phase Equilibrium
- MSE 322 (4cr) – Kinetics and Microstructural Evolution
- MSE 331 (3cr) – Crystallography and Structure
- MSE 333 (3cr) – Characterization of Materials
- MSE 342 (3cr) – Materials Processing I
- MSE 351 (3cr) – Electron Theory
- MSE 352 (3cr) – Functional Properties of Materials I
- MSE 362 (3cr) – Mechanical Behavior of Materials I
- MSE 431 (3cr) – Principles of Physical Materials
- MSE 442 (3cr) – Materials Processing II
- MSE 491 (2cr) – Materials Design and Failure
- MSE 492 (2cr) – Design in Materials Engineering II
- MSE 499 (4-5cr) – Senior Project

### Mathematics (24 Credits)

- MSE 310 (3cr)
- MSE 311 (2cr)
- MSE 312 (2cr)
- MSE 313 (2cr)
- 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
- MSE 321 (4cr)
- MSE 331 (3cr)
- MSE 333 (3cr)
- One course from the following list:
  - Math 309
  - Math 324
  - Math/Stat 390
  - Ind E 315

### Sciences (31 Credits)

- MSE 342 (3cr)
- MSE 351 (3cr)
- MSE 352 (3cr)
- MSE 362 (3cr)
- MSE 431 (3cr)
- MSE 442 (3cr)
- MSE 491 (2cr)
- MSE 492 (2cr)
- MSE 499 (4-5cr)

### Sciences (31 Credits)

- Chem 142 (5cr) – General Chemistry with lab
- Chem 152 (5cr) – General Chemistry with lab
- Phys 121 (5cr) – Mechanics with lab
- Phys 122 (5cr) – Electro/Oscillatory with lab
- Phys 123 (5cr) – Waves with lab
- Science Electives (6cr) – See adviser for science elective list

### Written & Oral Communications

### Written & Oral Communications (12 Credits)

- English Comp (5cr) – English Composition
- HCDE 231 (3cr) – Intro to Technical Writing
- HCDE 333 (4cr) – Adv. Tech Writing

### Visual, Literary & Performing Arts

### Visual, Literary & Performing Arts (VLPA/I&S) (24 Credits)

Minimum 10 credits in VLPA required.
Minimum 10 credits in I&S required.
Remaining 4 credits can be either VLPA or I&S.

### Engineering Fundamentals

### Engineering Fundamentals (24 Credits)

- AMATH 301 (4cr)
- CSE 142 (4cr)
- MSE 170 (4cr)
- AA 210 (4cr)
- CEE 220 (4cr)
- Two Courses from the following list:
  - ME 123
  - ME 230
  - ME 260
  - EE 215
  - IND E 250
  - ChemE 325

### Engineering Fundamentals (24 Credits)

### Engineering Fundamentals (24 Credits)

- Fund of Material Science [pr: CHEM 152]
- Fund of Material Science [pr: CHEM 152]
- Fund of Material Science [pr: CHEM 152]
- Fund of Material Science [pr: CHEM 152]
- Fund of Material Science [pr: CHEM 152]
- Fund of Material Science [pr: CHEM 152]

### Engineering Fundamentals (24 Credits)

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### Total Credits Required for Graduation (180 Credits)

## Application Deadlines

Early Admission – July 1st
Upper Division Admission – February 1st or July 1st

Last revised July 2010
# Materials Science and Engineering Sample Curriculum

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<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>♦ Engl 131 – English Composition</td>
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<td>♦ CSE 142 or AMATH 301</td>
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<th>Sophomore – Spring Quarter</th>
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<tbody>
<tr>
<td>♦ Phys 122 – Electro &amp; Lab I</td>
<td>Math 308 – Matrix Algebra</td>
<td>Engineering Elective</td>
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<tr>
<td>HCDE 231 – Technical Writing</td>
<td>CEE 220 – Mech. of Materials</td>
<td>Engineering Elective</td>
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<td>AA 210 – Statics</td>
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<td>VLP/A/I&amp;S</td>
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<td>VLP/A/I&amp;S</td>
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<table>
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<tr>
<th>Junior – Autumn Quarter</th>
<th>Junior – Winter Quarter</th>
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<tbody>
<tr>
<td>MSE 310 – Intro to MS&amp;E</td>
<td>MSE 322 – Kinetics &amp; Microstruc.</td>
<td>MSE 362 – Mech Behavr of Mat</td>
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<tr>
<td>MSE 321 – Thermo &amp; Phase Eq.</td>
<td>MSE 351 – Electron Theory</td>
<td>MSE 333 – Characterization of Mat</td>
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<tr>
<td>MSE 331 – Crystalliztn. &amp; Structure</td>
<td>MSE 342 – Materials Processing I</td>
<td>MSE 352 – Functional Prop. of Mat</td>
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<tr>
<td>MSE 311 – Integrated Junior Lab I</td>
<td>MSE 312 – Integrated Junior Lab II</td>
<td>MSE 313 – Integrated Junior Lab III</td>
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<tr>
<td>*MSE 499 – Senior Project</td>
<td>HCDE 333- Adv. Technical Writing</td>
<td>MSE Science Elective</td>
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<tr>
<td>VLP/A/I&amp;S</td>
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<td>Quarter Total</td>
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<table>
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<tr>
<th>Senior – Autumn Quarter</th>
<th>Senior – Winter Quarter</th>
<th>Senior – Spring Quarter</th>
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<td>MSE 442—Materials Processing II</td>
<td>MSE 491 – Material Design I</td>
<td>MSE 492 – Material Design II</td>
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<td>MSE 431 – Principles of Phys Mat.</td>
<td>MSE 499 – Senior Project</td>
<td>MSE 499 – Senior Project</td>
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<td>MSE Technical Elective</td>
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**Bold face** courses are required for upper-division admission  
See MSE Planbook for list of technical electives  
*MSE 499 is credit variable, (4 total required)*

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For more information contact:  
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