This resource is for ENGRUD students who entered the UW in AUT20 or later.

ChemE

Chemical Engineering
Graduation Requirements
University of Washington
http://cheme.washington.edu

Requirement Sheet Key:
◆ Placement Requirements;
Placement: July 1 at the end of the first year

ChemE

◆ E-FIG: ENGR 101 and GEN ST 199 (2cr)

Mathematics (24-25cr)
◆ MATH 124, 125, 126 - Calc. w/ Analytic Geom I-III (15cr)
MATH 307 - Intro to Differential Equations (3cr)
[pr: MATH 125]
MATH 308 - Matrix Algebra with Applications (3cr)
[pr: MATH 126]
One course from the following: IND E 315 (3cr); MATH 309 (3cr); STAT 390 (4cr)

sciences (41cr)
◆ CHEM 142 - General Chemistry (5cr)
◆ CHEM 152 - General Chemistry (5cr)
CHEM 162 - General Chemistry (5cr)
*Strongly recommended to complete in the first year
CHEM 237 - Organic Chemistry (4cr) OR CHEM 223 (4cr)
[pr: CHEM 153, CHEM 155, or CHEM 162]
CHEM 238 - Organic Chemistry (4cr) OR CHEM 224 (4cr)
[pr: CHEM 237, CHEM 355, or CHEM 237]
CHEM 455 - Physical Chemistry (3cr)
[CHEM 162; MATH 126; PHYS 123]

◆ PHYS 121 - Mechanics (5cr)
[pr: MATH 124 or MATH 134]
PHYS 122 - Electromagnetism (5cr)
[pr: MATH 125 or MA; PHY 121]
PHYS 123 - Waves (5cr)
[pr: MATH 126; PHYS 122]

Engineering General Education Requirements (32cr)
Written and Oral Communication:
◆ English Composition (5cr)
ENGR 231 - Intro to Technical Communication (3cr)

Areas of Knowledge:
Visual, Literary & Performing Arts - VLPA (10cr)
Individuals & Society - I&S (10cr)
Additional VLPA or I&S (4cr)
Diversity - DIV (3cr) (May overlap with VLPA or I&S)

Engineering Fundamentals (4cr)
AMATH 301 - Beginning Scientific Computing (4cr)
[pr: MATH 125, Q SCI 292, or MATH 135]
OR
CSE 142 - Computing Programming I (4cr)

Departmental Core (51cr)
CHEM E 310 - Material Energy Balances (4cr)
CHEM E 325 - Energy & Entropy (4cr)
CHEM E 326 - Chem. Engineering Thermodynamics (4cr)
CHEM E 330 - Transport Processes I (5cr)
CHEM E 340 - Transport Processes II (4cr)
CHEM E 435 - Transport Processes III (4cr)
CHEM E 436 - Chemical Engineering Lab I (3cr)
CHEM E 437 - Chemical Engineering Lab II (3cr)
CHEM E 457 - Principles of Molecular Engineering (3cr)
CHEM E 465 - Reactor Design (4cr)
CHEM E 480 - Process Dynamics and Control (4cr)
CHEM E 485 - Process Design I (4cr)
CHEM E 486 - Process Design II (5cr)

Molecular and Nanoscience Engineering (3cr)
CHEM E 455 - Surface and Colloid Science Lab (3cr)
OR
CHEM E 460 - Polymer chemistry Laboratory (3cr)

Electives (16cr)
See department for list of approved courses.

Free Electives (6-7cr)
Additional coursework in any subject area not used elsewhere in degree.

Total credits required for graduation: 180cr

Honors or accelerated sequences of chemistry, math and physics will satisfy the placement requirements. AMATH 351/352/353 may be alternatives to MATH 307/308/309, work with the department to confirm.

Updated September 2020
This resource is for ENGRUD students who entered the UW in AUT20 or later.

ChemE

Sample Curriculum
University of Washington
http://cheme.washington.edu

This is a sample four-year plan for ENGRUD students that prepares them to be able to request placement at the end of their first year. It is intended to provide a framework for ENGRUD students to reference as they create their own individual academic plan.

Courses required to request placement for ENGRUD students: ENGR 101; MATH 124, MATH 125, MATH 126; CHEM 142; PHYS 121; English Composition. ENGRUD students who are interested in ChemE must complete CHEM 152 and are strongly recommended to complete CHEM 162.

First Year

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
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<tbody>
<tr>
<td>MATH 124 - Calc w Analytic Geom I</td>
<td>MATH 125 - Calc w Analytic Geom II</td>
<td>MATH 126 - Calc w Analytic Geom III</td>
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<tr>
<td>CHEM 142 - General Chemistry</td>
<td>CHEM 152 - General Chemistry</td>
<td>CHEM 162 - General Chemistry</td>
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<tr>
<td>English Composition</td>
<td>VLPA / I&amp;S**</td>
<td>PHYS 121 - Mechanics</td>
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Second Year

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<tr>
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<tbody>
<tr>
<td>MATH 307 - Differential Equations</td>
<td>AMATH 301 or CSE 142</td>
<td>CHEM 310 - Materials/Energy Balance*</td>
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<tr>
<td>PHYS 122 - Electromagnetism</td>
<td>PHYS 123 - Waves</td>
<td>MATH 309 - Linear Analysis</td>
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<tr>
<td>VLPA / I&amp;S**</td>
<td>MATH 308 - Matrix Algebra</td>
<td>ENGR 231 - Intro to Technical Comm</td>
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Third Year

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<tr>
<td>CHEM E 325 - Energy &amp; Entropy</td>
<td>CHEM E 326 - CHEM E Thermodynamics</td>
<td>CHEM E 436 - CHEM E Lab I</td>
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<tr>
<td>CHEM E 330 - Transport Processes I</td>
<td>CHEM E 340 - Transport Processes II</td>
<td>CHEM E 457 - Principles of Molecular Engineering</td>
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<tr>
<td>CHEM E 455 - Physical Chemistry</td>
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<td>Engineering Elective</td>
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<tr>
<td>VLPA / I&amp;S**</td>
<td>VLPA / I&amp;S**</td>
<td>VLPA / I&amp;S**</td>
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Fourth Year

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<td>CHEM E 435 - Transport Processes III</td>
<td>CHEM E 437 - CHEM E Lab II</td>
<td>CHEM E 486 – Process Design II</td>
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<tr>
<td>CHEM E 455 - Surface and Colloid Science Laboratory</td>
<td>CHEM E 480 - Proc. Dynamics &amp; Control</td>
<td>Engineering Elective</td>
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<tr>
<td>CHEM E 465 - Reactor Design</td>
<td>CHEM E 485 - Process Design I</td>
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<td>Qtr. Total: 14</td>
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◆ = Placement Requirements
*CHEM E 310 is the first course in a seven-quarter sequence of core classes; MATH 307 and PHYS 122 are prerequisites and must be completed prior to enrolling in CHEM E 310.

** 3 credits of coursework carrying the diversity (DIV) designation are required. These credits may overlap with VLPA or I&S.

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