### CHEMICAL ENGINEERING SAMPLE CURRICULUM

*University of Washington*

**September 2009**

#### FRESHMAN – AUTUMN QUARTER
- **MATH 124 – Calculus I** 5
- **CHEM 142 – Chem & Lab I** 5
- **ENGL COMP** 5

**QUARTER TOTAL** 15

#### FRESHMAN – WINTER QUARTER
- **MATH 125 – Calculus II** 5
- **CHEM 152 – Chem & Lab II** 5
- **VLP/A/I&S** 5

**QUARTER TOTAL** 15

#### FRESHMAN – SPRING QUARTER
- **MATH 126 – Calculus III** 5
- **CHEM 162 – General Chem** 5
- **PHYS 121 – Mechan & Lab** 5

**QUARTER TOTAL** 15

#### SOPHOMORE – AUTUMN QUARTER
- **MATH 307 – Diff. Equations** 3
- **CHEM 237 (or 223) – Org Chem** 4
- **PHYS 122 – Electro & Lab** 5
- **AMATH 301 – Beg Scien. Comp or CSE 142** 4

**QUARTER TOTAL** 16

#### SOPHOMORE – WINTER QUARTER
- **MATH 308 – Matrix Algebra** 3
- **CHEM 238 (or 224) – Org Chem** 4
- **PHYS 123 – Waves & Lab** 5
- **HCDE 231- Intro to Tech. Writing** 3

**QUARTER TOTAL** 15

#### SOPHOMORE – SPRING QUARTER
- **MATH 309 (or Substitute Course*)** 3
- **CHEM E 325 – Energy and Entropy** 4
- **HCDE 333 (or COM 220 or Engl 381) – Adv Tech Writing** 4-5
- **VLPA/I&S** 4

**QUARTER TOTAL** 15-16

#### JUNIOR – AUTUMN QUARTER
- **CHEM E 310 – Matl/Engry Balance** 4
- **CHEM 455 – Phys Chem I** 3
- **Engineering Elective** 3
- **VLP/A/I&S** 5

**QUARTER TOTAL** 15

#### JUNIOR – WINTER QUARTER
- **CHEM E 326 – Thermodynamics** 4
- **CHEM E 330 – Tmprt Process I** 5
- **Engineering Elective** 3
- **VLP/A/I&S** 3

**QUARTER TOTAL** 15

#### JUNIOR – SPRING QUARTER
- **CHEM E 340 – Tmprt Process II** 4
- **CHEM E 436 - Chem E Lab I** 3
- **CHEM 457 – Phys Chem III** 3
- **VLP/A/I&S** 5

**QUARTER TOTAL** 15

#### SENIOR – AUTUMN QUARTER
- **CHEM E 435 – Tranprt Process III** 4
- **CHEM E 455 – Colloid Lab** 3
- **CHEM E 465 – Reactor Design** 4
- **FREE Elective** 5

**QUARTER TOTAL** 16

#### SENIOR – WINTER QUARTER
- **CHEM E 437 – Chem Engr lab II** 3
- **CHEM E 480 – Process Dynamics** 4
- **CHEM E 485 – Process Design I** 4
- **Engineering Elective** 3

**QUARTER TOTAL** 14

#### SENIOR – SPRING QUARTER
- **CHEM E 486 – Process Desgn II** 5
- **Engineering Elective** 3
- **VLPA/I&S** 2
- **Engineering Elective** 4

**QUARTER TOTAL** 14

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* AMATH 351, AMATH 352, AMATH 353 may be substituted for MATH 307, 308, 309.
* Substitute course for MATH 309: AMATH 353, MATH/STAT 390 or IND E 315
+ Recommended that you take before CHEM 436

**BOLD face courses are required for Upper-Division Admission**

See the Department of Chemical Engineering Bachelor of Science Degree Requirements for a list of courses acceptable as Engineering Electives.

**For more information contact:** Engineering Advising, 301 Loew Hall, Box 352180, Seattle, Washington 98195-2180

Phone (206) 543-1770 – email (engradv@engr.washington.edu)

**OR**

Dave Drischell, Chemical Engineering Advising

Benson 105, Box 351750, Seattle, Washington 98195-1750

Phone (206) 543-2252 – email (advising@cheme.washington.edu)
# CHEMICAL ENGINEERING GRADUATION REQUIREMENTS

## University of Washington

September 2009

See end for Early Admission Requirements.

- Upper-Division Admission Requirements.

### Mathematics .................................................................[24 Credits]

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 124</td>
<td>5</td>
<td>Calculus with Analytic Geometry I</td>
</tr>
<tr>
<td>MATH 125</td>
<td>5</td>
<td>Calculus with Analytic Geometry II</td>
</tr>
<tr>
<td>MATH 126</td>
<td>5</td>
<td>Calculus with Analytic Geometry III</td>
</tr>
<tr>
<td>MATH 307</td>
<td>3</td>
<td>Intro to Differential Equations [pr: MATH 125]</td>
</tr>
<tr>
<td>MATH 308</td>
<td>3</td>
<td>Matrix Algebra [pr: MATH 126]</td>
</tr>
</tbody>
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One course from the following list:
MATH 309, MATH/STAT 390, or IND E 315

(AMATH 351, 352 & 353 can substitute for MATH 307, 308 & 309)

### Sciences ..................................................................[44 Credits]

<table>
<thead>
<tr>
<th>Course</th>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 142</td>
<td>5</td>
<td>General Chemistry with lab</td>
</tr>
<tr>
<td>CHEM 152</td>
<td>5</td>
<td>General Chemistry with lab [pr: CHEM 142]</td>
</tr>
<tr>
<td>CHEM 162</td>
<td>5</td>
<td>General Chemistry with lab [pr: CHEM 152]</td>
</tr>
<tr>
<td>CHEM 237</td>
<td>4</td>
<td>Organic Chem or CHEM 223 [pr: CHEM 162]</td>
</tr>
<tr>
<td>CHEM 238</td>
<td>4</td>
<td>Organic Chem or CHEM 224 [pr: CHEM 223 or CHEM 237]</td>
</tr>
<tr>
<td>CHEM 455</td>
<td>3</td>
<td>Physical Chem [pr: MATH 126 or 136; CHEM 155 or 162; PHYS 123]</td>
</tr>
<tr>
<td>CHEM 457</td>
<td>3</td>
<td>Physical Chemistry [pr: CHEM 455/456 or CHEM 326]</td>
</tr>
<tr>
<td>PHYS 121</td>
<td>5</td>
<td>Mechanics with lab [pr: MATH 124]</td>
</tr>
<tr>
<td>PHYS 122</td>
<td>5</td>
<td>Electro/Oscillatory with lab [pr: MATH 125]</td>
</tr>
<tr>
<td>PHYS 123</td>
<td>5</td>
<td>Waves with lab [pr: MATH 126]</td>
</tr>
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### Written and Oral Communications................................[12 Credits]

<table>
<thead>
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<th>Course</th>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL COMP</td>
<td>5</td>
<td>English Composition</td>
</tr>
<tr>
<td>TC 231</td>
<td>3</td>
<td>Intro to Technical Writing [pr: ENGL COMP]</td>
</tr>
<tr>
<td>TC 333</td>
<td>4-5</td>
<td>Adv Tech Writ. [pr: TC 231] or COM 220 or ENGL 381 or COM 320 or ENGL 182</td>
</tr>
</tbody>
</table>

### Visual, Literary & Performing Arts

- Individuals & Societies [VLPA/I&S] ...............[24 Credits]

Minimum 10 credits in VLPA (formerly Humanities) required.
Minimum 10 credits in I&S (formerly Social Sciences) required.
Additional 4 credits from either VLPA or I&S.

### Engineering Fundamentals/Electives .. [20 Credits]

<table>
<thead>
<tr>
<th>Course</th>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMATH 301</td>
<td>4</td>
<td>Beg. Scientific Computing (Preferred option)</td>
</tr>
<tr>
<td>CSE 142</td>
<td>4</td>
<td>Computer Programming I</td>
</tr>
</tbody>
</table>

Electives [16cr] See departmental planbook for a list of acceptable courses.

### Chemical Engr. Core Courses ........... [51 Credits]

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CHEM 325</td>
<td>4</td>
<td>Energy and Entropy [pr: Chem142, Math 126, Phys 121]</td>
</tr>
<tr>
<td>CHEM 310</td>
<td>4</td>
<td>Material &amp; Energy Balance</td>
</tr>
<tr>
<td>CHEM 326</td>
<td>4</td>
<td>Chem Engr Thermodynamics</td>
</tr>
<tr>
<td>CHEM 330</td>
<td>5</td>
<td>Transport Processes I</td>
</tr>
<tr>
<td>CHEM 340</td>
<td>4</td>
<td>Transport Processes II</td>
</tr>
<tr>
<td>CHEM 435</td>
<td>4</td>
<td>Transport Processes III</td>
</tr>
<tr>
<td>CHEM 436</td>
<td>3</td>
<td>Chem Engr Lab I</td>
</tr>
<tr>
<td>CHEM 437</td>
<td>3</td>
<td>Chem Engr Lab II</td>
</tr>
<tr>
<td>CHEM 455</td>
<td>3</td>
<td>Surface &amp; Colloid Science Lab</td>
</tr>
<tr>
<td>CHEM 465</td>
<td>4</td>
<td>Reactor Design</td>
</tr>
<tr>
<td>CHEM 480</td>
<td>4</td>
<td>Process Dynamics &amp; Control</td>
</tr>
<tr>
<td>CHEM 485</td>
<td>4</td>
<td>Process Design I</td>
</tr>
<tr>
<td>CHEM 486</td>
<td>5</td>
<td>Process Design II</td>
</tr>
</tbody>
</table>

### Free Electives ..................................................[5 Credits]

### Total credits required for graduation......... [180]

### Early Admission Requirements

1. Early Admission is an option for AUTUMN QUARTER ONLY.
2. Student MUST be enrolled at UW.
3. Math 124,125 & 126; or equivalent.
4. PHYS 121; CHEM 142, 152, & 162.
5. 5 credits of English Composition.
6. 15 of the above 30 credits MUST have been completed at the UW.