**BIOENGINEERING SAMPLE CURRICULUM**  
*University of Washington*  

**December 2008**

<table>
<thead>
<tr>
<th>FRESHMAN – AUTUMN QUARTER</th>
<th>FRESHMAN – WINTER QUARTER</th>
<th>FRESHMAN – SPRING QUARTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>♦ MATH 124 – Calculus I</td>
<td>♦ MATH 125 – Calculus II</td>
<td>♦ MATH 126 – Calculus III</td>
</tr>
<tr>
<td>♦ ENGL COMP</td>
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<tr>
<td></td>
<td>♦ MATH 308* – Matrix Algebra</td>
<td>♦ PHYS 123 Waves/Optics</td>
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<td></td>
<td>♦ PHYS 122 Elec &amp; Lab</td>
<td>♦ BIOEN 301 BioE Sys Analysis</td>
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<tr>
<td></td>
<td>MATH 307 – Differential Equations</td>
<td>BIOEN 201 – BioE Tools</td>
</tr>
<tr>
<td></td>
<td>(Winter ONLY Prereq to BIOEN 301)</td>
<td>VLPA/I&amp;S</td>
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<tr>
<td>QUARTER TOTAL</td>
<td>15</td>
<td>QUARTER TOTAL</td>
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<thead>
<tr>
<th>SOPHOMORE – AUTUMN QUARTER</th>
<th>SOPHOMORE – WINTER QUARTER</th>
<th>SOPHOMORE – SPRING QUARTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>♦ BIOL 180 – Intro Biology I</td>
<td>♦ BIOL 200 – Intro to Biology II</td>
<td>EE 215 Fund Electrical Engr</td>
</tr>
<tr>
<td>♦ PHYS 121 – Mechanics &amp; Lab</td>
<td>MATH 308* – Matrix Algebra</td>
<td>PHYS 123 Waves/Optics</td>
</tr>
<tr>
<td>HCDE 231 – Intro Tech Writing</td>
<td>♦ PHYS 122 Elec &amp; Lab</td>
<td>BIOEN 301 BioE Sys Analysis</td>
</tr>
<tr>
<td>MATH 307 – Differential Equations</td>
<td>BIOEN 301 – BioE Tools</td>
<td>VLPA/I&amp;S</td>
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<tr>
<td>CHEM 223 or CHEM 237 – Organic Chemistry</td>
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<tr>
<td>QUARTER TOTAL</td>
<td>16</td>
<td>QUARTER TOTAL</td>
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<thead>
<tr>
<th>JUNIOR – AUTUMN QUARTER</th>
<th>JUNIOR – WINTER QUARTER</th>
<th>JUNIOR – SPRING QUARTER</th>
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</thead>
<tbody>
<tr>
<td>MATH/STAT 390 Prob &amp; Stats</td>
<td>CHEM E 260 – Thermodynamics</td>
<td>BIOEN Sr. Elective**</td>
</tr>
<tr>
<td>CHEM 223 or CHEM 237 – Organic Chemistry</td>
<td></td>
<td>VLPA/I&amp;S</td>
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<td>16</td>
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<tbody>
<tr>
<td>BIOEN Senior Elective**</td>
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<tr>
<td>BIOEN 482 – BioE Capstone***</td>
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</tr>
<tr>
<td>BIOC 405 or 440 – Intro Biochem</td>
<td>VLPA/I&amp;S</td>
<td>BIOEN 357 – Intro Molec BioE</td>
</tr>
<tr>
<td>VLPA/I&amp;S</td>
<td>Approved Engr Elective**</td>
<td>VLPA/I&amp;S</td>
</tr>
<tr>
<td>QUARTER TOTAL</td>
<td>14</td>
<td>QUARTER TOTAL</td>
</tr>
</tbody>
</table>

* Important Course Prereqs: BIOEN 201 has MATH 126 & PHYS 121 as prerequisites; CSE 142 & PHYS 122 as co-requisites. BIOEN 301 has MATH 126 & PHYS 121 as prerequisites; CSE 142 & PHYS 122 as co-requisites. BIOEN 482 has PHYS 122 as a prerequisite. EE 215 has PHYS 122 as a prerequisite. BIOEN 302 has EE 215 as a prerequisite. BIOEN 357 has CHEM 223 or 237 as a recommended prerequisite. BIOEN 301 has CHEM 223 or 237 as a recommended prerequisite.

** Senior and Approved Electives should support the Bioengineering Capstone Project.**

*** BIOEN 481 is a required didactic course on design and capstone principles; it also covers bioengineering in a broader social context. BIOEN 482 is the capstone project, an independent design project taken with a faculty supervisor. Students spend between 2 – 4 quarters completing their capstone project. The schedule will be worked out with the individual faculty supervisor. BIOEN 481 and 482 carry “W” credit.

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

Students planning on attending medical school are encouraged to meet with an advisor to discuss additional requirements.

**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  
Bioengineering Advising, 1705 NE Pacific Street, N107, Box 355061  
Phone (206) 685-2000 – email (bioeng@u.washington.edu)
BIOENGINEERING GRADUATION REQUIREMENTS
University of Washington

December 2008

BioEngineering is proposing changes to its undergraduate curriculum for Winter 2010 - if you are interested in planning for a degree in BioEngineering, please contact the BioE department at bioeng@u.washington.edu for more specifics.

Mathematics ................................................................. [25 Credits]

♦ MATH 124 [5cr] Calculus with Analytic Geometry I
♦ MATH 125 [5cr] Calculus with Analytic Geometry II
♦ MATH 126 [5cr] Calculus with Analytic Geometry III
MATH 307* [3cr] Intro to Diff. Equations [pr: MATH 125]
MATH 308* [3cr] Matrix Algebra [pr: MATH 126]
(*AMATH 351 & 352 may replace MATH 307, 308 by dept. petition)

MATH/STAT 390 [4cr] Probability and Statistics [pr: MATH 126]
(or IND E 315 (3cr) approved by dept. petition)

Sciences ................................................................. [47 Credits]

♦ CHEM 142 [5cr] General Chemistry with lab
♦ CHEM 152 [5cr] General Chemistry with lab [pr CHEM 142]
♦ CHEM 162 [5cr] General Chem [pr: CHEM 152]
OR

♦ 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]

♦ BIOL 180†† [5cr] Intro Biology [pr: CHEM 152]
♦ BIOL 200 [5cr] Intro Biology [pr: BIOL 180]
BIOC 405 or 440 [3-4cr] Intro Biochemistry [pr: BIOL 200 & CHEM 237]

Written and Oral Communications.............................. [8 Credits]

♦ ENGL COMP [5cr] English Composition
T C 231 [3cr] Intro to Technical Writing [pr: ENGL COMP]

*Note BIOEN 481 and 482 are "W" courses

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 in either VLPA or I&S

Engineering Fundamentals ......................... [17 Credits]

♦ CSE 142† [4cr] Computer Programming I
CSE 143 [5cr] Computer Programming II
CHEM E 260 [4cr] Thermodynamics [pr: CHEM 142, MATH 126, PHYS 121]

Bioengineering Core Courses............. [38 Credits]

♦ BIOEN 201† [2cr] Bioengineering Tools [pr: MATH 126, PHYS 121; cr: CSE 142, PHYS 122]
BIOEN 301 [4cr] BioE Systems Analysis [pr: BIOEN 201, BIOI 180, CHEM 142, PHYS 122; cr: BIOI 200, MATH 307]

BIOEN 302 [4cr] Intro Biomed Instr [pr BIOEN 301]
BIOEN 303 [4cr] BioE Signal Processing
BIOEN 304 [4cr] Intro BioE Analysis of Physio I
BIOEN 305 [4cr] Intro BioE Analysis of Physio II [pr: prob/stat]
BIOEN 357 [4cr] Intro Molecular BioE [pr: Organic Chem recommended]
BIOEN 482 [8cr] BioE Capstone Design

Bioengineering Senior Electives......... [15 Credits]
See departmental information for a list of acceptable courses. Courses should focus on a thrust area. At least one design-designated senior elective is required.

Approved Engineering Elective.......... [3 Credits]
See departmental information for a list of acceptable courses. Extra Bioengineering sr elective credit may fulfill this requirement.

Free Elective............................ [3 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. CHEM 142, 152, & 162.
5. 5 credits of English Composition.
6. 15 of the above 30 credits MUST have been completed at the University of Washington.
7. Running Start students should consult with a departmental adviser.

Notes:
- Upper admission students should apply for spring admission as a first priority.
- Early admission students should apply for fall.