## Electrical Engineering BS (2016-2017)

### F.M. Long Bio-Engineering Option

**University of Wyoming**

### Freshman Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 1101</td>
<td>3</td>
<td>C</td>
<td>FYS</td>
</tr>
<tr>
<td>ENGL 1010</td>
<td>3</td>
<td>C</td>
<td>COM1</td>
</tr>
<tr>
<td>ES 1060</td>
<td>3</td>
<td>C</td>
<td>Prerequisite: MATH 2200 or concurrent enrollment</td>
</tr>
<tr>
<td>CHEM 1020</td>
<td>4</td>
<td>D</td>
<td>PN#1; Prerequisite: ACT Math score of 23 or above, or concurrent enrollment in Math 1400, or 1405 or 1450.</td>
</tr>
<tr>
<td>MATH 2200</td>
<td>4</td>
<td>C</td>
<td>Q; Prerequisite: grade of C or better in MATH 1405 or 1450 or Level 5 on the MPE or Math ACT of 27 or Math SAT of 600.</td>
</tr>
</tbody>
</table>

Credit hours subtotal: 14

### Freshman Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 2300</td>
<td>4</td>
<td>C</td>
<td>Prerequisite: CHEM 1020, 1050, 1000 or equivalent.</td>
</tr>
<tr>
<td>ES 2110 Statics</td>
<td>3</td>
<td>*</td>
<td>Prerequisite: grade of C or better in MATH 2200 or AP credit in MATH 2200.</td>
</tr>
<tr>
<td>or any ES, EE, BE course (&gt;2000 level), or COSC 3011 or COSC 3750</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>MATH 2205</td>
<td>4</td>
<td>C</td>
<td>Prerequisite: grade of C or better in MATH 2200 or AP credit in MATH 2200.</td>
</tr>
<tr>
<td>PHYS 1210</td>
<td>4</td>
<td>C</td>
<td>PN#2; Prerequisites: a grade of C or higher in MATH 2200 &amp; concurrent enrollment in MATH 2205.</td>
</tr>
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</table>

Credit hours subtotal: 15

### Sophomore Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES 2120 Dynamics</td>
<td>3</td>
<td>*</td>
<td>Prerequisites: ES 2110 and MATH 2205; PHYS 1210 or concurrent enrollment.</td>
</tr>
<tr>
<td>or any ES, EE, BE course (&gt;2000 level), or COSC 3011 or COSC 3750</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>ES 2210 Electric Circuit Analysis</td>
<td>3</td>
<td>C</td>
<td>Prerequisite: MATH 2205.</td>
</tr>
<tr>
<td>MATH 2210 Calculus III</td>
<td>4</td>
<td>C</td>
<td>Prerequisite: grade of C or better in MATH 2205 or AP credit in MATH 2205.</td>
</tr>
<tr>
<td>PHYS 1220 Engineering Physics II</td>
<td>4</td>
<td>C</td>
<td>Prerequisites: grades of C or higher in MATH 2200 and 2205, and concurrent enrollment in MATH 2210.</td>
</tr>
<tr>
<td>Human Culture course</td>
<td>3</td>
<td>D</td>
<td>H#1</td>
</tr>
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</table>

Credit hours subtotal: 17

### Sophomore Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 2220 Circuits and Signals</td>
<td>4</td>
<td>C</td>
<td>(S.O.) Prerequisite: ES 2210</td>
</tr>
<tr>
<td>EE 2390 Digital Systems Design</td>
<td>4</td>
<td>C</td>
<td>Prerequisites: COSC 1010 or COSC1030 or ES 1060 and corequisite MATH 2210</td>
</tr>
<tr>
<td>LIFE 1010 General Biology</td>
<td>4</td>
<td>C</td>
<td>Prerequisites: grade of C or better in MATH 0921 or level 2 on the MPE or math ACT of 21 or math SAT of 600.</td>
</tr>
<tr>
<td>MATH 2250 Elementary Linear Algebra</td>
<td>3</td>
<td>C</td>
<td>Prerequisite: grade of C or better in MATH 2200 or 2350.</td>
</tr>
<tr>
<td>MATH 2310 Applied Differential Equations I</td>
<td>3</td>
<td>C</td>
<td>Prerequisite: grade of C or better in MATH 2205. (Note: MATH 2210 is required for the sequel.)</td>
</tr>
</tbody>
</table>

Credit hours subtotal: 18

Notes: (S.O.) offered Spring semester ONLY   (F.O.) offered Fall semester ONLY

*Students must have a minimum cumulative GPA of 2.0 in all Engineering course for graduation.

Grade of C (2.0) or higher is required for all prerequisite courses.

Students must complete a minimum of 48 hours of upper division coursework, 30 of which must from the University of Wyoming

PHYS 1210: no credit can be earned in PHYS 1210 if taken after ES 2120.

PHYS 1220 should be taken before or concurrently with ES 2210.
### Electrical Engineering, BS

F.M. Long Bio-Engineering Option

**University of Wyoming**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs</th>
<th>Min Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Junior Fall Semester</strong></td>
<td>EE 3220</td>
<td>Signals and Systems</td>
<td>3</td>
<td>C</td>
<td>(F.O.) Prerequisite: EE 2220.</td>
</tr>
<tr>
<td></td>
<td>EE 3310</td>
<td>Electronics I</td>
<td>4</td>
<td>*</td>
<td>(F.O.) Prerequisites: PHYS 1220 or PHYS 1320 and EE 2200 corequisite.</td>
</tr>
<tr>
<td></td>
<td>EE 3510</td>
<td>Electromechanics</td>
<td>4</td>
<td>C</td>
<td>(F.O.) Prerequisite: ES 2210 and corequisite EE 2220.</td>
</tr>
<tr>
<td></td>
<td>Communication 2 course</td>
<td>3</td>
<td>C</td>
<td>COM2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Human Culture course</td>
<td>3</td>
<td>D</td>
<td>H#2</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Credit hours subtotal:</strong></td>
<td></td>
<td></td>
<td>17</td>
<td></td>
</tr>
<tr>
<td><strong>Junior Spring Semester</strong></td>
<td>EE 3330</td>
<td>Electronics II</td>
<td>4</td>
<td>C</td>
<td>(S.O.) Prerequisite: EE 2220 and EE 3310.</td>
</tr>
<tr>
<td></td>
<td>EE 4075</td>
<td>C++ with Numerical Methods for Engineers</td>
<td>4</td>
<td>*</td>
<td>(S.O.) Prerequisites: MATH 2205 and (COSC 1010 or ES 1060) and (MATH 2250 or 2310) or consent of instructor.</td>
</tr>
<tr>
<td></td>
<td>EE 4390</td>
<td>Microprocessors</td>
<td>3</td>
<td>*</td>
<td>(S.O.) Prerequisite: PHYS 1220 or ES 2210 and EE 2390.</td>
</tr>
<tr>
<td></td>
<td>MOLB 2021</td>
<td>General Microbiology</td>
<td>4</td>
<td>C</td>
<td>Prerequisites: LIFE 1010, CHEM 1000 or equivalent.</td>
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<tr>
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<td><strong>Credit hours subtotal:</strong></td>
<td></td>
<td></td>
<td>15</td>
<td></td>
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<tr>
<td><strong>Senior Fall Semester</strong></td>
<td>BE 4810</td>
<td>Bioinstrumentation</td>
<td>3</td>
<td></td>
<td>(F.O.) Prerequisites: ES 3330.</td>
</tr>
<tr>
<td></td>
<td>or EE 4330</td>
<td>Electronic System Design</td>
<td>4</td>
<td>*</td>
<td>Prerequisites: EE 2390 and 3330.</td>
</tr>
<tr>
<td></td>
<td>EE 3150</td>
<td>Electromagnetics</td>
<td>3</td>
<td>C</td>
<td>(F.O.) Prerequisites: ES 2210 and MATH 2210.</td>
</tr>
<tr>
<td></td>
<td>EE 4820</td>
<td>Senior Design I</td>
<td>2</td>
<td>C</td>
<td>(F.O.) Prerequisites: COM2; EE 2390 and corequisite EE 3330</td>
</tr>
<tr>
<td></td>
<td>MOLB 3610</td>
<td>Principles of Biochemistry</td>
<td>4</td>
<td>C</td>
<td>Prerequisite: LIFE 1010 and a grade of C or better in CHEM 2300 or 2440</td>
</tr>
<tr>
<td></td>
<td>Technical Elective</td>
<td>3</td>
<td>*</td>
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<td></td>
<td><strong>Credit hours subtotal:</strong></td>
<td></td>
<td></td>
<td>15</td>
<td></td>
</tr>
<tr>
<td><strong>Senior Spring Semester</strong></td>
<td>BE 4820</td>
<td>Biodata Systems</td>
<td>3</td>
<td>C</td>
<td>(S.O.) Prerequisites: basic course or equivalent in electronics, ZOO 4240 or concurrent enrollment</td>
</tr>
<tr>
<td></td>
<td>or EE 4620</td>
<td>Automatic Control Systems</td>
<td>3</td>
<td>*</td>
<td>(S.O.) Prerequisite: EE 2220.</td>
</tr>
<tr>
<td></td>
<td>EE 4220</td>
<td>Probabilistic Signals and Systems</td>
<td>3</td>
<td>C</td>
<td>(S.O.) Prerequisite: EE 3220 and MATH 2210.</td>
</tr>
<tr>
<td></td>
<td>EE 4830</td>
<td>Senior Design II</td>
<td>2</td>
<td>*</td>
<td>COM3; (S.O.) Prerequisites: EE 4820 and EE 3330.</td>
</tr>
<tr>
<td></td>
<td>MOLB 3610</td>
<td>Principles of Biochemistry</td>
<td>4</td>
<td>C</td>
<td>Prerequisite: LIFE 1010 and a grade of C or better in CHEM 2300 or 2440</td>
</tr>
<tr>
<td></td>
<td>EE Elective</td>
<td>3</td>
<td>*</td>
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<td></td>
</tr>
<tr>
<td></td>
<td><strong>Credit hours subtotal:</strong></td>
<td></td>
<td></td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL CREDIT HOURS:</strong></td>
<td></td>
<td></td>
<td>128</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- (S.O.) offered Spring semester ONLY  (F.O.) offered Fall semester ONLY
- Technical Elective: Any course marked as technical electives in the ECE Math/Science Elective List.
- COM3 to meet this requirement with EE 4820/4830 the COM2 course must be taken before EE 4820. Also EE 4820 & EE 4830 must be taken in sequence.
- Also EE 4820 & EE 4830 must be taken in sequence.
- EE 4830 is ideally taken in the final semester.
- Options for Medical School (pre-med) and related programs (Note: total hours will exceed 132).
- Visit the Preprofessional Health Advisory Office, College of Health Sciences for advising.
- Substitute CHEM 1030 for CHEM 2300; Add CHEM 2420 & CHEM 2440; MOLB 3610, and add MOLB 4100 (Medicine) or ZOO 3115 (Dentistry)