# Electrical Engineering BS (2015-2016)

## F.M. Long Bio-Engineering Option

### University of Wyoming

#### Freshman Fall Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1010</td>
<td>College Composition &amp; Rhetoric</td>
<td>3</td>
<td>C</td>
<td>COM1</td>
</tr>
<tr>
<td>ES 1060</td>
<td>Introduction to Engineering Problem Solving</td>
<td>3</td>
<td>C</td>
<td>Prerequisite: MATH 2200 or concurrent enrollment</td>
</tr>
<tr>
<td>FYS 1101</td>
<td></td>
<td>3</td>
<td>C</td>
<td>FYS</td>
</tr>
<tr>
<td>CHEM 1020</td>
<td>General Chemistry I</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 1430.</td>
</tr>
<tr>
<td>MATH 2200</td>
<td>Calculus I</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: **17**

#### Freshman Spring Semester

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<tbody>
<tr>
<td>CHEM 2300</td>
<td>Introductory Organic Chemistry</td>
<td>4</td>
<td>C</td>
<td>Prerequisite: CHEM 1020, 1050, 1000 or equivalent.</td>
</tr>
<tr>
<td>EE 1010</td>
<td>Intro to Electrical and Computer Engineering</td>
<td>1</td>
<td>C</td>
<td>(S.O.)</td>
</tr>
<tr>
<td>ES 2110</td>
<td>Statics</td>
<td>3</td>
<td>C</td>
<td>Prerequisite: grade of C or better in MATH 2200 or AP credit in MATH 2200.</td>
</tr>
<tr>
<td>MATH 2205</td>
<td>Calculus II</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>Engineering Physics I</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>
</tbody>
</table>

Credit hours subtotal: **16**

#### Sophomore Fall Semester

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
<th>Grade</th>
<th>Notes</th>
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<tbody>
<tr>
<td>ES 2120</td>
<td>Dynamics</td>
<td>3</td>
<td>C</td>
<td>Prerequisites: ES 2110 and MATH 2205, PHYS 1210 or concurrent enrollment.</td>
</tr>
<tr>
<td>ES 2210</td>
<td>Electric Circuit Analysis</td>
<td>3</td>
<td>C</td>
<td>Prerequisite: MATH 2205.</td>
</tr>
<tr>
<td>MATH 2210</td>
<td>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</td>
<td>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>LIFE 1010</td>
<td>General Biology</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Human Culture course</td>
<td>3</td>
<td>D</td>
<td>H#1</td>
</tr>
</tbody>
</table>

Credit hours subtotal: **17**

#### Sophomore Spring Semester

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
<th>Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 2220</td>
<td>Circuits and Signals</td>
<td>4</td>
<td>C</td>
<td>(S.O.) Prerequisite: ES 2210</td>
</tr>
<tr>
<td>EE 2390</td>
<td>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</td>
<td>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</td>
<td>Elementary Linear Algebra</td>
<td>3</td>
<td>C</td>
<td>Prerequisite: grade of C or better in MATH 2200 or 2250.</td>
</tr>
<tr>
<td>MATH 2310</td>
<td>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.*
*EE 1010 may be replaced with a technical elective if transfer credits >30 hours.*
*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.*
*Technical Elective: Any course in Engineering, Computer Science, or those marked as technical electives in the ECE Math/Science Elective List.*
**Electrical Engineering, BS**

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

**University of Wyoming**

### Junior Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs</th>
<th>Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 3220 Signals and Systems</td>
<td>3</td>
<td>C</td>
<td>(F.O.) Prerequisite: EE 2220.</td>
</tr>
<tr>
<td>EE 3310 Electronics I</td>
<td>4</td>
<td>*</td>
<td>(F.O.) Prerequisites: PHYS 1220 or PHYS 1320 and corequisite: EE 2220.</td>
</tr>
<tr>
<td>EE 3510 Electromechanics</td>
<td>4</td>
<td>C</td>
<td>(F.O.) Prerequisite: ES 2210 and corequisite EE 2220.</td>
</tr>
<tr>
<td>Communication 2 course</td>
<td>3</td>
<td>C</td>
<td>COM2</td>
</tr>
<tr>
<td>Human Culture course</td>
<td>3</td>
<td>D</td>
<td>H#2</td>
</tr>
</tbody>
</table>

**Credit hours subtotal:** 17

### Junior Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
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<th>Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 3330 Electronics II</td>
<td>4</td>
<td>C</td>
<td>(S.O.) Prerequisite: EE 2220 and EE 3310.</td>
</tr>
<tr>
<td>EE 4075 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 2110) or consent of instructor.</td>
</tr>
<tr>
<td>EE 4390 Microprocessors</td>
<td>3</td>
<td>*</td>
<td>(S.O.) Prerequisite: PHYS 1220 or ES 2210 and EE 2390.</td>
</tr>
<tr>
<td>MOLB 2021 General Microbiology</td>
<td>4</td>
<td>*</td>
<td>Prerequisites: a grade of C or better in LIFE 1010 and CHEM 1000 or 1020.</td>
</tr>
<tr>
<td>LIS/Wyoming Constitution Course</td>
<td>3</td>
<td>D</td>
<td>V</td>
</tr>
</tbody>
</table>

**Credit hours subtotal:** 18

### Senior Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs</th>
<th>Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE 4810 Bioinstrumentation</td>
<td>3</td>
<td></td>
<td>(F.O.) Prerequisites: ES 3330.</td>
</tr>
<tr>
<td>or EE 4330 Electronic System Design</td>
<td>(+)</td>
<td></td>
<td>Prerequisites: EE 2390 and 3330.</td>
</tr>
<tr>
<td>EE 3150 Electromagnetics</td>
<td>3</td>
<td>C</td>
<td>(F.O.) Prerequisites: ES 2210 or PHYS 1220 and MATH 2210.</td>
</tr>
<tr>
<td>EE 4820 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>General Elective</td>
<td>3</td>
<td>*</td>
<td>Any ≥1000 level course (MATH course must be &gt;Math 2210)</td>
</tr>
</tbody>
</table>

**Credit hours subtotal:** 14

### Senior Spring Semester

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<th>Course</th>
<th>Hrs</th>
<th>Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE 4820 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>or EE 4620 Automatic Control Systems</td>
<td>(3)</td>
<td></td>
<td>(S.O.) Prerequisite: EE 2220.</td>
</tr>
<tr>
<td>EE 4220 Probabilistic Signals and Systems</td>
<td>3</td>
<td>C</td>
<td>(S.O.) Prerequisite: EE 3220 and MATH 2210.</td>
</tr>
<tr>
<td>EE 4830 Senior Design II</td>
<td>2</td>
<td>C</td>
<td>(S.O.) Prerequisites: EE 4820 and EE 3330.</td>
</tr>
<tr>
<td>MOLB 3610 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>EE Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Credit hours subtotal:** 15

**TOTAL CREDIT HOURS:** 132

**Notes:**
- (S.O.) offered Spring semester ONLY  (F.O.) offered Fall semester ONLY
- EE Elective: any non-required EE course.
- Technical Elective: Any course marked as technical electives in the ECE Math/Science Elective List.
- 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)

Rev: 5/15/2018