

# B.S. Electrical Engineering

## Curriculum with Double Co-op <sup>1</sup> — Class of 2010

### 1st YEAR

MAT 126	Calculus I	4
PHY 121	Physics for Engineers I	4
ECE 101	Intro to ELE and CEN Engin	4
CHY 121	Intro to Chemistry	3
CHY 123	Intro to Chemistry Lab	1
		<b>16</b>

MAT 127	Calculus II	4
PHY 122	Physics for Engineers II	4
ECE 177	Intro to Progr for Engineers	4
ENG 101	College Composition	3
CMJ 103	Fund of Public Communication	3
		<b>18</b>

### 2nd YEAR

MAT 228	Calculus III	4
Elective	Basic Engineering	3
ECE 210	Electrical Networks I	3
ECE 275	Sequential Logic Systems	3
Elective	HV & SC (1)	3
		<b>16</b>

MAT 258	Diff Eq. & Linear Algebra	4
Elective <sup>2</sup>	Basic Science	4
ECE 211	Electrical Networks II	3
ECE 214	Electrical Networks Lab	3
ECP 214	Engineering Writing I	1
ECE 271	Micro Arch & Applications	3
		<b>18</b>

### 3rd YEAR

ECE 300	Seminar	1
CHB 350 <sup>3</sup>	Statistical Process & Analysis	3
ECE 342	Electronics I	4
ECP 342	Engineering Writing II	1
ECE 351	Fields and Waves	3
ECE 314	Linear Circuits & Systems	3
		<b>15</b>

ECE 401	Design Project I	1
ECP 401	Engineering Writing III	1
ECE 394	Spring Semester Coop	3
		<b>5</b>

### 4th YEAR

ECE 402	Design Project II	4
Elective	Technical (1)	3
Elective	Technical (2)	3
Elective	HV & SC (2)	3
Elective	HV & SC (3)	3
		<b>16</b>

ECE 403	Design Project III	2
ECE 486	Digital Signal Processing	4
ECE 343	Electronics II	4
ECE 414	Feedback Control System	3
Elective	Technical (3)	3
		<b>16</b>

### 5th YEAR

ECE 394	Fall Semester Coop	3
		<b>3</b>

Elective	HV & SC (4)	3
Elective	HV & SC (5)	3
		<b>14</b>

**MINIMUM CREDIT HOURS TO GRADUATE: 129**

Notes:

1. This is only a sample curriculum. Adjustments, such as interchanging HV & SC and technical electives, and switching ECE 351, ECE 486, and ECE 414 between Junior and Senior years, can be made to suit individual preferences. Check with your academic advisor for assistance. Be sure all degree requirements listed on the [check-off sheet](#) are met.
2. **BIO 222/223** or **ERS 102** can be used to satisfy the Basic Science Elective and the HV & SC Elective under the Population and Environment categories. If either of these courses is taken, the three credit hours that is freed up can be replaced with a technical elective.
3. CHB 350 can be replaced with either ECE 383 or MAT 332; Students are allowed to take either MAT 332 or CHB 350 with ECE 383 as a technical elective.
4. The three Technical Electives must be 300-level or higher ECE Courses excluding ECE 394.

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## Information About Elective Courses

**Technical Electives:** The Curriculum requires five Technical Elective courses to broaden a student's knowledge base or to specialize in an area such as: Microelectronics, Sensors, Power, Computer Hardware, Communications or Signal Processing. At least three of the Technical Electives must be 300 Level or higher ECE Courses (exclusive of ECE 394). With approval of the student's advisor, two of the Technical Electives may be ECE 394 or selected from various advanced Math, Physics, Biology, Chemistry, Engineering, Science, Computer Science, or Business courses.

**Human Values and Social Context and Ethics:** In addition to CMJ 103, the curriculum requires five courses to complete the General Education Requirements in Ethics and Human Values and Social Context (HV&SC). In addition to the Ethics requirement, the five areas under HV&SC are: Western Cultural Tradition, Social Contexts and Institutions, Cultural Diversity and International Perspective, Population and the Environment, and Artistic and Creative Expression. Note that CMJ 103 satisfies the Social Contexts and Institutions requirement. A list of HV&SC courses with the categories that they satisfy are available on the [Office of Student Records](#) web page. The structure of the ECE curriculum guarantees that all other General Education Requirements are met. You may elect to take ERS 102 or BIO 222/223 to satisfy your Basic Science requirement and part of the 18 credit hour HV&SC requirement. This option frees up 3 credit hours which can be used to take an additional Technical Elective.

**Basic Engineering Elective:** The Curriculum requires at least one engineering course, outside of the department, to broaden a student's knowledge base in engineering. Courses satisfying the Basic Engineering Elective include:

CHB 200	Fundamentals of Process Engineering	MEE 230	Thermodynamics I
CIE 231	Fundamentals of Environmental Engineering	MEE 252	Statics and Strength of Materials
MEE 150	Applied Mechanics: Statics		

**Basic Science Elective:** In addition to CHY 121/123, PHY 121 and PHY 121, the Curriculum requires at least one additional physical or biological science course, with a lab, to broaden a student's knowledge base in science. Courses satisfying the Basic Science Elective include:

AST 215/110	General Astronomy I	BIO 222/223	Biology
AST 216/110	General Astronomy II	ERS 101	Introduction to Geology
CHY 122/124	Molecular Basis of Chemical Change	ERS 102	Environmental Geology of Maine
PHY 236/223	Quantum Mechanics / Special Relativity		

## Program Specific Requirements

1. Repeating any ECE course for which a grade of F, L, or WF has been recorded requires a grade of C- or better in prerequisites for the course.
2. Dismissal from the program will be recommended if any required course in the program is taken twice without achieving a passing grade. This includes courses where a grade of AU, L, W, or WF is received.
3. To obtain a BS in Electrical Engineering, a student must: (1) meet all University academic requirements; (2) meet all Electrical Engineering curriculum requirements; and (3) have a GPA of 2.0 or better in all ECE courses.
4. Any exceptions to the program specifics listed above require approval of the ECE faculty.

## Additional Information

Check the web page of [Frequently Asked Questions \(FAQ\)](#) for additional information about the ECE program.

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