

# Electrical Engineering Program Requirement

2007-2008

Authorized Version: 10/07



Candidates for the Bachelor of Science in Engineering (Electrical) must satisfy the following requirements in addition to those required by Western Michigan University:

1. A grade point average of 2.0 or better must be earned in courses presented for graduation with ECE, IME, or ME prefixes.
2. No more than two grades of "D" or "DC" in courses presented for graduation may be counted for graduation.
3. The following program of 129 semester credit hours must be completed. The schedule below is an example of one leading to graduation in eight semesters, beginning in fall.
4. The Electrical Engineering curriculum requires students to complete a course in General Education Area I, Area II, Area III, Area IV, Area V, and Area VIII. At least two of the General Education Area courses must be at the 3000-4000 level, and no more than two courses from any one department may be used to satisfy the Area requirements.

***Pre-engineering requirements are in darker italic print.***

First Semester – 16 hours

<b>MATH 1220 or (MATH 1700)</b>	<b><i>Calculus I (Calculus I, Science and Engineering)</i></b> .....	<b>4</b>
<b>CHEM 1100/1110</b>	<b><i>General Chemistry I/ Laboratory I</i></b> .....	<b>3/1</b>
<b>IME 1020</b>	<b><i>Technical Communication</i></b> .....	<b>3</b>
<b>IME 1420</b>	<b><i>Engineering Graphics</i></b> .....	<b>3</b>
<b>AREA VIII</b>	<b><i>Health and Well-being</i></b> .....	<b>2</b>

Second Semester – 16 hours

<b>MATH 1230 or (MATH 1710)</b>	<b><i>Calculus II (Calculus II, Science and Engineering)</i></b> .....	<b>4</b>
<b>PHYS 2050</b>	<b><i>Mechanics and Heat</i></b> .....	<b>4</b>
<b>PHYS 2060</b>	<b><i>Mechanics and Heat Lab</i></b> .....	<b>1</b>
<b>ECE 2500</b>	<b><i>Digital Logic</i></b> .....	<b>3</b>
<b>CS 1110</b>	<b><i>Computer Science I</i></b> .....	<b>4</b>

Third Semester – 16 hours

<b>MATH 2720</b>	<b><i>Vector and Multivariate Calculus</i></b> .....	<b>4</b>
<b>PHYS 2070</b>	<b><i>Electricity and Light</i></b> .....	<b>4</b>
<b>PHYS 2080</b>	<b><i>Electricity and Light Lab</i></b> .....	<b>1</b>
<b>ECE 2510</b>	<b><i>Introduction to Microprocessors</i></b> .....	<b>4</b>
<b>AREA I</b>	<b><i>Fine Arts*</i></b> .....	<b>3</b>

Fourth Semester – 15 hours

<b>MATH 3740</b>	<b><i>Intro to Linear Algebra and Differential Equations</i></b> .....	<b>4</b>
<b>ECE 2100</b>	<b><i>Circuit Analysis</i></b> .....	<b>4</b>
<b>Mathematics or Science Elective****</b>	.....	<b>4</b>
<b>AREA II</b>	<b><i>Humanities*</i></b> .....	<b>3</b>

Fifth Semester – 17 hours

ECE 2210	Electronics I .....	4
ECE 3100	Network Analysis.....	3
ECE 3610	Electromagnetic Fields.....	4
ME 2560	Statics .....	3
AREA III	The United States: Cultures and Issues.....	3

Sixth Semester – 17 hours

ECE 3200	Electronics II.....	4
ECE 3300	Electrical Machinery .....	4
ECE 3710	Linear Systems.....	3
ECE 3800	Probabilistic Methods in Signal/Systems Analysis.....	3
IME 3160	Report Writing .....	3

Seventh Semester – 17 hours

ECE	Electrical Engineering Elective Group*** .....	6
ECE 4810	Electrical/Computer Engineering Design I***** .....	2
IME 3100	Engineering Economy.....	3
ME 2580	Dynamics .....	3
AREA IV	Other Cultures and Civilizations.....	3

Eight Semester – 15 hours

ECE	Electrical & Computer Engineering Elective Group*** .....	3
ECE 4820	Electrical/Computer Engineering Design II.....	3
ME	Engineering Science Elective** .....	3
AREA V	Social and Behavioral Sciences .....	3
Departmental Approved Technical Electives***	.....	3

* 6-8 credits of General Education are required in Pre-Engineering.	
** See Electrical and Computer Engineering Advisor for a list of approved electives.	
*** Electrical and Computer Engineering Elective Group	
ECE 4200 ..... Power Electronics	3
ECE 4300 ..... Electrical Power Systems	3
ECE 4500 ..... Digital Electronics	4
ECE 4510 ..... Microcontroller Applications	4
ECE 4550 ..... Digital Signal Processing	3
ECE 4600 ..... Communication Systems	3
ECE 4700 ..... Feedback Systems	3
ECE 4710 ..... Motion and Controls	3
Other 4000 or 5000 level Electrical Engineering courses may be used in place of the above courses if <i>PRIOR</i> approval is obtained from the Electrical and Computer Engineering Advisor, and Department Chair.	
**** PHYS 3090 and PHYS 3100, or CHEM 1120 and CHEM 1130, or STAT 3640	
***** Permission form required to be signed by Electrical and Computer Engineering Advisor and department chair. Must complete ECE 2510, IME 3160, and either ECE 3300 or ECE 3200.	

