

# ELECTRICAL AND COMPUTER ENGINEERING

Students with an interest in both areas can pursue a dual BSE program in Electrical and Computer Engineering and thus can earn two BSE degrees at the same time:

- BSE degree in Electrical Engineering
- BSE degree in Computer Engineering

The dual degree program requires specified coursework that equals a minimum of 141 total credits.

## Dearborn Discovery Core (General Education)

All students must satisfy the University's Dearborn Discovery Core requirements ([https://catalog.umd.umich.edu/undergraduate/gen\\_ed\\_ddc/](https://catalog.umd.umich.edu/undergraduate/gen_ed_ddc/)), in addition to the requirements for the major

## Major Requirements

In addition to completion of the Dearborn Discovery Core, the following courses are required to earn a dual BSE degree in Electrical and Computer Engineering from UM-Dearborn.

### Prerequisite Courses

Code	Title	Credit Hours
COMP 270	Tech Writing for Engineers (Fulfills 3 credits of DDC Written and Oral Communication)	3
ECON 201 or ECON 202	Prin: Macroeconomics (Fulfills 3 credits of DDC Social and Behavioral Analysis) Prin: Microeconomics	3
ENGR 100	Introduction to Engineering and Engineering Design	3
MATH 115	Calculus I	4
MATH 116	Calculus II	4
MATH 215	Calculus III	4
MATH 228	Diff Eqns with Linear Algebra	4
IMSE 317	Eng Probability and Statistics	3
ECE 276 or MATH 276	Discrete Math in Computer Engr Discrete Math Meth Compnr Engr	4
CHEM 134	General Chemistry IA	4
PHYS 150	General Physics I	3
PHYS 150L	General Physics I Lab/Dis	1
PHYS 151	General Physics II	3
PHYS 151L	General Physics II Lab/Dis	1
ECE 273	Digital Systems	4
ECE 270	Computer Methods in ECE I	4
ECE 210	Circuits	4

## Dual Major in EECE Courses

Code	Title	Credit Hours
<b>Major Core</b>		<b>20</b>
ECE 311	Electronic Circuits I	4
ECE 3171	Analog & Discrete Sig & Sys	4
ECE 3731	Microproc and Embedded Sys	4
ECE 370	Adv Soft Techn in Comp Engr	4
ECE 375	Intro to Comp Architecture	4
ECE 385	Elec Materials and Devices	3
ECE 450	Analog and Digital Comm Sys	4
ECE 460	Automatic Control Systems	4
ECE 471	Comp Networks/Data Comm	4
ECE 473	Embedded System Design	4
ECE 475	Comp Hardware Org/Design	4
ECE 478	Operating Systems	4
ECE 480	Intro to Dig Signal Processing	4
ECE 4951	Sys Desgn and Microcontrollers	3
ENT 400 or ENGR 400	Entrepreneurial Thinking&Behav Appl Business Tech for Engr	3
ECE 4981 or ECE 4982	Electrical Engineering Des I Computer Engineering Des I	2
ECE 4983 or ECE 4984	Electrical Engin Design II Computer Engin Design II	2
<b>EECE Electives <sup>1</sup></b>		<b>6-8</b>
Select one course (3-4 credits) from the following:		
ECE 237	Energy Systems in Electric, Autonomous, and Robotic Vehicles	4
ECE 319	Electromagnetic Compatibility	4
ECE 414	Electronic Systems Design	4
ECE 415	Power Electronics	3
ECE 4361	Electric Machines and Drives	3
ECE 435	Intro to Mobil/Smrt Dev & Tech	4
ECE 439	Battery Technologies and EV Applications	3
ECE 4432	Renewable Elec Pwr Sys	4
ENGR 492	Exper Honors Directed Research	1
ENGR 493	Exper Hnrs Dir Dsgn	1
Select one course (3-4 credits) from the following:		
ECE 413	Intro to VLSI Design	3
ECE 4881	Introduction to Robot Vision	3
ENGR 299	Experiential Learning in Engineering & Computer Science 1	1
ENGR 399	Experiential Learning in Engineering & Computer Science 2	1
ENGR 492	Exper Honors Directed Research	1
ENGR 493	Exper Hnrs Dir Dsgn	1
ENGR 499	Experiential Learning in Engineering & Computer Science 3	1

<sup>1</sup> If ENGR 100 was completed for 2 credits, 8 credits of EECE Electives will be required.