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

Please see the Dearborn Discovery Core (General Education) (https://umdearborn.edu/dearborn-discovery-core/) webpage or additional information.

Foundational Studies

Writing and Communication (GEWO) – 6 Credits

Upper-Level Writing Intensive (GEWI) – 3 Credits

Quantitative Thinking and Problem Solving (GEQT) – 3 Credits

Critical and Creative Thinking (GECC) – 3 Credits

Areas of Inquiry

Natural Science (GENS) – 7 Credits

- Lecture/Lab Science Course
- Additional Science Course

Social and Behavioral Analysis (GESB) – 9 Credits

Humanities and the Arts (GEHA) – 6 Credits

Intersections (GEIN) – 6 Credits

Capstone

Capstone (GECE) – 3 Credits

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	Prin: Macroeconomics (Fulfills 3 credits of DDC Social and Behavioral Analysis)	3
or ECON 202	Prin: Microeconomics	
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	Discrete Math in Computer Engr	4
or MATH 276	Discrete Math Meth Comptr Engr	
CHEM 134	General Chemistry IA	4
PHYS 150	General Physics I	4
PHYS 151	General Physics II	4
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
Major Core		**20**
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	Entrepreneurial Thinking&Behav	3
ECE 4981	Electrical Engineering Des I	2
or ECE 4982	Computer Engineering Des I	
ECE 4983	Electrical Engin Design II	2
or ECE 4984	Computer Engin Design II	
EECE Electives [1]		**7-8**
Select one course (3-4 credits) from the following:		
ECE 319	Electromagnetic Compatibility	4
ECE 414	Electronic Systems Design	4
ECE 415	Power Electronics	4
ECE 4361	Electric Machines and Drives	4
ECE 435	Intro to Mobil/Smrt Dev & Tech	4
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 399	Experiential Honors Prof. Prac	1
ENGR 492	Exper Honors Directed Research	1
ENGR 493	Exper Hnrs Dir Dsgn	1

[1] If ENGR 100 was completed for 2 credits, 8 credits of EECE Electives
will be required.