

Cleveland State University
Washkewicz College of Engineering
Bachelor of Science in Computer Science and Electrical Engineering
Computer Science + Electrical Engineering Degree Map (Effective Spring 2025)

First Year								
Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed	
ENG 100 Intensive College Writing or ENG 101 College Writing I	3		W/C	ESC 102 Technical Writing or ENG 102 College Writing II	3		W/C	
MTH 181 Calculus I	4		M/QL	MTH 182 Calculus II	4		M/QL	
CIS 151 Invitation to Computing or ESC 151 C Programming	3	X		PHY 243 University Physics I	5		NS+NS Lab & WAC	
ESC 120 Intro to Engineering Design	2	X		CIS 260 Introduction to Programming	4	X		
ESC 100 or ASC 101 Orientation to Univ. Life	1		INTRO					
U.S. Diversity Gen. Ed. Elective	3		DIV					
Semester Total	16			Semester Total	16			

Second Year								
Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed	
PHY 244 University Physics II	5		WAC	ESC 310 Engineering Stats/Probability	3	X		
EEC 310 Electric Circuits I	4	X		EEC 311 Electric Circuits II	4	X		
Arts & Humanities Gen. Ed. Elective	3			EEC 313 Electronics I	3	X		
MTH 288 Linear Algebra	3	X		CIS 265 Data Structure and Algorithm	4	X		
ESC 250 Differential Equations	3	X		ESC 130 Career Prep Course* (Optional)	1			
Semester Total	18			Semester Total	14 or 15			

Third Year								
Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed	
CIS 340 Systems to Programming	3	X		CIS 345 Operating Systems	3	X		
MTH 220 Discrete Mathematics	3	X		CIS 390 Introduction to Algorithms	3	X		
EEC 383 Digital Systems	3	X		CIS 480 Computer Architecture	3	X		
PHL 215 Engineering Ethics	3	X	A&H+WAC	EEC 318 Analysis, Des. & Sim. of Dyn. Systems	3	X		
CIS 335 Language Processor	3	X		EEC 384 Digital Systems Lab	2	X		
EEC 316 Electronics Devices Lab	1	X						
Semester Total	16			Semester Total	14			

Fourth Year								
Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed	
CIS/EEC 493 Design Project I	2	X	CAP WAC	CIS/EEC 494 Design Project II	3	X	CAP	
ESC 282 Engineering Economy	3	X	SS	EEC 417 Embedded Systems	3	X		
African American Exp. Gen. Ed. Elective	3		DIV	EEC 440 Control Systems	3	X		
Social Sciences Gen. Ed. Elective**	3		SS**	CIS 402/EEC 414 Technical Communication	2	X	WAC	
General Elective	3	X		General Elective	1	X		
Semester Total	14			Semester Total	12			

Total Degree Hours: 120 (*121 with ESC 130)

Assumption: University Requirement of Foreign Language has been met by either successfully completing two (2) years of the same language in high school; or two (2) semesters of the same language in college; or passing CSU's language placement test in reading, writing, and speaking of a second language other than English.

College/Program Notes: The plan above is a suggested guide to ensure that all General Education, College, University, and Major requirements are met within 4 years of study. Students may deviate from the suggested placement of Gen Ed courses, although the M/QL and W/C requirements should be completed during the first year. General Electives ensure that a student accumulates the minimum credit hour totals needed for graduation. Students must have a **minimum of 120 total credit hours**. Depending upon elective choices made, students may not need as many electives as indicated above or may need additional electives.

General Education Key + Notes

General Ed. Electives can be taken in any order except ESC 282 (Engineering Economy) after MTH 182 (Calculus II) as well as PHL 215 (Engineering Ethics) after ESC 102 /ENG 102 (Tech. Writing/College Writing II).	
Intro = Introduction to University Life Requirement (one course required)	SS = Social Sciences Requirement (2 courses required, one of which must be focused outside the US)
W/C = Writing/Composition Requirement (two courses, each C or better required)	A&H = Arts & Humanities Requirement (2 courses required, one of which must be focused outside the US)
M = Mathematics (two courses required, each C or better)	DIV = Social Diversity Requirement (2 courses required, one US Diversity and one African American Experience)
NS = Natural Sciences (two courses required, one of which must have a lab – NS&LAB)	WAC/SPAC = Writing/Speaking Across the Curriculum Requirement (3 courses required, one in the major)
*Engr. & Computer Science Career Prep course (ESC 130) is highly recommended.	CAP = Capstone topic needs to be a combination of Electrical Engineering and Computer Science.
** of the SS courses, at least one must be focused on Africa, Latin America, Asia or the Middle East (ALAAME)	

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