COMPUTER ENGINEERING - BACHELOR OF SCIENCE IN COMPUTER ENGINEERING

Overview

The Bachelor of Science in Computer Engineering program of the Klipsch School is accredited by the Engineering Accreditation Commission of ABET, Inc. This particular program gives students the opportunity to explore more deeply the area of **computer Engineering**.

Electrical Engineering Program Educational Objectives

Below are the program educational objectives (PEOs) that describe the expected accomplishments of graduate during their first few years after graduation.

1. Our graduates will obtain relevant, productive employment in the private sector, government and/or pursue an advanced degree.
2. Our graduates will be using their engineering foundation to innovate solutions to the problems of the real world.

Requirements (124 credits)

Students must complete all University degree requirements, which include: General Education requirements, Viewing a Wider World requirements, and elective credits to total at least 124 credits with 48 credits in courses numbered 300/3000 or above. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

Prefix	Title	Credits
General Education		
Area I: Communications		
English Composition - Level 1		
ENGL 1110G	Composition I	4
English Composition - Level 2 [2]		*3*
Oral Communication [2]		*3*
Area II: Mathematics		
MATH 1511G	Calculus and Analytic Geometry I [1]	4
Area III: Laboratory Sciences		
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	4
PHYS 1310G & PHYS 1310L	Calculus -Based Physics I and Calculus -Based Physics I Lab	4
Area IV: Social/Behavioral Sciences (3 credits) [2]		*3*
Area V: Humanities [2]		*3*
Area VI: Creative and Fine Arts [2]		*3*
General Education Elective		
MATH 1521G	Calculus and Analytic Geometry II (Required Mathematics and Natural Science)	4
Viewing A Wider World		**6**
Viewing a Wider World Electives [3]		
Departmental/College Requirements		
Program Specific Requirements		
Mathematics and Natural Science		
PHYS 1320G & PHYS 1320L	Calculus -Based Physics II and Calculus -Based Physics II Lab	4
ENGR 190	Introduction to Engineering Mathematics	4
E E 200	Linear Algebra, Probability and Statistics Applications	4
C S 278	Discrete Mathematics for Computer Science	4
Required Course (Electrical and Computer Engineering & Computer Science)		
ENGR 120	DC Circuit Analysis	4
ENGR 130	Digital Logic	4
ENGR 140	Introduction to Programming and Embedded Systems	4
E E 362	Introduction to Computer Organization	4
E E 462	Computer Systems Architecture	3
E E 490	Selected Topics (Electronic Devices)	2
E E 490	Selected Topics (Digital VLSI)	2
E E 490	Selected Topics (Computer Engineering Cornerstone)	2
ENGR 401	Engineering Capstone I	3
ENGR 402	Engineering Capstone II	3
C S 172	Computer Science I	4
C S 271	Object Oriented Programming	4
C S 272	Introduction to Data Structures	4
C S 343	Algorithm Design & Implementation [4]	3
C S 370	Compilers and Automata Theory	4
C S 371	Software Development	4
C S 419	Computing Ethics and Social Implications of Computing	1
C S 474	Operating Systems I	3
ECE & CS Electives: Choose three courses from the following (two must be ECE courses):		*9*
E E 409	Hardware & Software Codesign	
E E 412	ASIC Design	
E E 443	Mobile Application Development	
E E 458	Hardware Security and Trust	
E E 465	Machine Learning I	
E E 467	ARM SOC Design	
E E 406	Quantum Computing	
E E 490	Selected Topics (Applications of Parallel Computing XSEDE Collaborative Course)	
CHME 467	Nanoscience and Nanotechnology	
C S 471	Programming Language Structure I	
C S 478	Computer Security	
C S 482	Database Management Systems I	
C S 484	Computer Networks I	
C S 487	Applied Machine Learning I	
C S 491	Parallel Programming	
C S 493	Algorithm Design and Implementation	
C S 496	Cloud and Edge Computing	
MATH 3140	Introduction to Numerical Methods	
Second Language Requirement (none required)		
Electives to bring total credits to 124		
Total Credits		**124**

[1] MATH 1511G Calculus and Analytic Geometry I is required for the degree but students may need to take any prerequisites needed to enter MATH 1511G first.

[2] See the General Education (https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/) section of the catalog for a full list of courses.

[3]

See the Viewing a Wider World (https://catalogs.nmsu.edu/nmsu/
general-education-viewing-wider-world/#viewingawiderworldtext)
section of the catalog for a full list of courses.

4	Or could be replaced with C S 372 Data Structures and Algorithms