

COMPUTER ENGINEERING - BACHELOR OF SCIENCE IN COMPUTER ENGINEERING

A Suggested Plan of Study for Students

This roadmap assumes student placement in MATH 1511G and ENGL 1110G. The contents and order of this roadmap may vary depending on initial student placement in mathematics and English. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change.

First Year			
Fall			
ENGR 190	Introduction to Engineering Mathematics	4	Credits
ENGL 1110G	Composition I	4	
ENGR 130	Digital Logic	4	
ENGR 140	Introduction to Programming and Embedded Systems	4	
Credits		16	
Spring			
MATH 1511G	Calculus and Analytic Geometry I ²	4	Credits
COMM 1115G	Introduction to Communication ²	3	
ENGR 120	DC Circuit Analysis	4	
C S 172	Computer Science I	4	
Credits		15	
Second Year			
Fall			
MATH 1521G	Calculus and Analytic Geometry II	4	Credits
PHYS 1310G & PHYS 1310L	Calculus -Based Physics I and Calculus -Based Physics I Lab	4	
E E 200	Linear Algebra, Probability and Statistics Applications	4	
C S 271	Object Oriented Programming	4	
Credits		16	
Spring			
PHYS 1320G & PHYS 1320L	Calculus -Based Physics II and Calculus -Based Physics II Lab	4	Credits
ENGL 2210G	Professional and Technical Communication Honors ^{English Composition Level 2}	3	
C S 272	Introduction to Data Structures	4	
C S 278	Discrete Mathematics for Computer Science	4	
Credits		15	
Third Year			
Fall			
General Ed/VWW ^{2,3}		3	Credits
General Ed/VWW ^{2,3}		3	
E E 362	Introduction to Computer Organization	4	
C S 371	Software Development	4	
E E 490	Selected Topics (Electronic Devices)	2	
Credits		16	
Spring			
General Ed/VWW ^{2,3}		3	Credits
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors ²	4	

C S 343	Algorithm Design & Implementation	3
C S 370	Compilers and Automata Theory	4
E E 490	Selected Topics (Computer Engineering Cornerstone)	2
Credits		16
Fourth Year		
Fall		
ENGR 401	Engineering Capstone I	3
E E 490	Selected Topics (Digital VLSI)	2
E E 462	Computer Systems Architecture	3
Comp Engineering Elective 1 ⁴		3
C S 474	Operating Systems I	3
Credits		14
Spring		
ENGR 402	Engineering Capstone II	3
Comp Engineering Elective 2 ⁴		3
Comp Engineering Elective 3 ⁴		3
General Ed/VWW ^{2,3}		3
General Ed/VWW ^{2,3}		3
C S 419	Computing Ethics and Social Implications of Computing	1
Credits		16
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 Calculus and Analytic Geometry I first.

² See the General Education and Viewing a Wider World (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/>) section of the catalog for a full list of courses.

³ Depending on availability of specific courses in the fall or spring semester, students may need to reorganize the Comp Engineering Electives, STEM electives, and/or Gen Ed/VWW electives in their junior and senior year. Students are strongly advised to consult with their ECE Faculty Mentor for assistance in planning their final year.

⁴ Computer Engineering Elective Courses:

- E E 412 ASIC Design, E E 409 Hardware & Software Codesign, E E 458 Hardware Security and Trust, E E 467 ARM SOC Design, E E 490 Selected Topics, E E 490 Applications of Parallel Computing XSEDE Collaborative Course, E E 465 Machine Learning I
- CHME 467 Nanoscience and Nanotechnology
- C S 478 Computer Security, C S 482 Database Management Systems I, C S 487 Applied Machine Learning IC S 491 Parallel Programming C S 488 Introduction to Data Mining C S 471 Programming Language Structure IC S 475 Artificial Intelligence IC S 476 Computer Graphics IC S 383 Introduction to Deep Learning C S 384 Graph Data Mining C S 477 Digital Game Design C S 481 Visual Programming C S 485 Human-Centered Computing C S 496 Cloud and Edge Computing