ELECTRICAL & COMPUTER ENGINEERING

This four-year roadmap lists all of the curriculum requirements for the BS in Computer Engineering program, but note that **students' actual semesters and overall timeline may look different, and in fact, it's extremely rare for students to follow this roadmap as it's laid out**. Students' actual plans will differ based on a number of factors and this roadmap should only be used as a tool alongside other resources. **Students should plan and tailor their overall degree plan based on their individual needs and conditions**, such as completed/missing pre-requisites, scholarship requirements, academic/personal workload, Fall/Spring only classes, potential Summer courses, etc.

Semester One	Cr	Admit Req	Gen Ed	Notes
ENGL 1120 Composition II	3	Y	COMM	Pre-major admit requirement
MATH 1512 Calculus I	4	Y	MATH	Pre-major admit requirement
PHYS 1310 Calc-based Physics I	3	*	CHOICE	Lab 1310L not required
ECE 101 Intro to ECE	1	*		
ECE 131L Progamming Fundamentals	4	*		
Total Credit Hours	**15**			

Semester Two	Cr	Admit Req	Gen Ed	Notes
MATH 1522 Calculus II	4	Y	CHOICE	Pre-major admit requirement
PHYS 1320 Calc-based Physics II	3	*	PNS	
PHYS 1320L Calc-based Physics II Lab	1	*	PNSL	
ECE 231L Intermediate Programming	4	*		
Communication Gen Ed Elective	3		COMM	See Catalog for options
Total Credit Hours	**15**			

Semester Three	Cr	Admit Req	Gen Ed	Notes
ECE 203 Circuit Analysis I	3	*		
ECE 238L Computer Logic Design	4	*		
MATH 2531 Calculus III	4	*		
ENG 220 Engineering, Business & Society	3			Fall only %
ECE 206L Instrumentation	2	*		
Total Credit Hours	**16**			

Semester Four	Cr	Admit Req	Gen Ed	Notes
ECE 213 Circuit Analysis II	3	*		
ECE 300 Advanced Engineering Mathematics	4			MATH 314+316 may substitute
MATH 327 Discrete Structures	3			
ECE 330 Software Design	3			Spring only %
Second Language Gen Ed Elective	3		SL	See Catalog for options
Total Credit Hours	**16**			

Semester Five	Cr	Gen Ed	Notes
ECE 314L Signals and Systems	4		
ECE 321L Electronics I	4		Fall only %
ECE 335 Integrated Software Systems	3		Fall only %
ECE 340 Probabilistic Methods	3		
Total Credit Hours	**14**		

Semester Six	Cr	Gen Ed	Notes
ECE 331 Data Structure & Algorithms	3		Spring only %
ECE 344L Microprocessors	4		
ECE 440 Intro to Computer Networks	3		Cross-listed with CS 485
Basic Science with Laboratory	4	*	See Catalog for options
Total Credit Hours	**14**		

Semester Seven	Cr	Gen Ed	Notes
ECE 419 Senior Design I	3		Senior standing required
ECE 338 Intermediate Logic Design	3		Fall only %
ECE 341 Intro to Communication Systems	3		Fall only %
ECON 2110/2120 Macro or Microeconomics	3	SB	
Humanities Gen Ed Elective #	3	LANG	See Catalog for options
Total Credit Hours	**15**		

Semester Eight	Cr	Gen Ed	Notes
ECE 420 Senior Design II	3		
ECE 437 Computer Operating Systems	3		Cross-listed with CS 481
ECE 400-level elective	3		See Catalog for options
Diversity # or any elective	3		See Catalog for options
Art and Design Gen Ed Elective	3	ART	See Catalog for options
Total Credit Hours	**15**		

Degree Total	120

Cells filled with grey represent courses that satisfy the UNM General Education Curriculum

Courses in yellow are upper division (300s, 400s) and are program restricted. In addition to meeting their pre-requisites, students must be admitted into the ECE Department as majors to enroll in them.

If a Humanities course that also counts as Diversity is taken, students are not required to complete an additional Diversity but may instead choose any elective to fulfill those 3 hours

A minium grade of C is required for all courses. A grade of C- is NOT considered passing. Credit/No Credit, CR/NC, is not an option for any required course.

% Fall/Spring only ECE courses are subject to change. For pending changes, see ece.unm.edu

* Denotes courses that qualify towards ECE departmental admission

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General Education Curriculum (31 credit hours)

Communication-COMM 6hrs	ENGL 1120 Composition II, 3hrs (Students that place out will need another Communication elective) Course of your choice, 3hrs . See gened.unm.edu or Catalog for list of approved options.
Mathematics/Statistics-MATH 3hrs	MATH 1512 Calculus I
Physical/Natural Sciences-PNS/PNSL 4hrs	PHYS 1320 & 1320L Calc-based Physics II with Lab
Social/Behavioral Sciences-SB 3hrs	ECON 2110 or 2120 Macro or Microeconomics
Humanities-HUM 3hrs	Course of your choice. See gened.unm.edu or Catalog for list of approved options.
Art and Design-ART 3hrs	Course of your choice. See gened.unm.edu or Catalog for list of approved options.
Second Language-LANG 3hrs	Course of your choice. See gened.unm.edu or Catalog for list of approved options.
Student Choice-CHOICE 6hrs Two additional courses from different Gen Ed areas	MATH 1522 Calculus II PHYS 1310 Calc-based Physics I

Mathematics (15 credit hours)

MATH 1512*, MATH 1522*, MATH 2531* Calculus I, II and III
MATH 327 Discrete Structures

Science (11 credit hours)

PHYS 1310*, PHYS 1320*, 1320L* Physics I, II and II lab
Basic Science and Laboratory (4 credit hours)*: BIOL 1110/1110L, 1140/1140L, 2110L, 2410L,
CHEM 1215/1215L, PHYS 2310/2310L, or ASTR 2110/2110L, 2115/2115L

Diversity (3 credit hours)

The U.S. & Global Diversity & Inclusion undergraduate requirement promotes a broad-scale understanding of the culture, history or current circumstance of diverse groups of people who have experienced historic and/or contemporary inequitable treatment in the U.S. or in a global context. Some Humanities courses are also eligible as Diversity courses and be counted towards both requirements.

Computer Engineering Lower Division Requirements (24 Credit Hours)

Lower Division courses are not program restricted. ECE pre-majors & non-ECE student may take these.
ECE 101 Introduction to ECE (1)*
ECE 131L Programming Fundamentals (4)*
ECE 203 Circuit Analysis I (3)*
ECE 206L Instrumentation (2)*
ECE 213 Circuit Analysis II (3)*
ECE 231L Intermediate Programming (4)*
ECE 238L Computer Logic Design (4)*
ENG 220 Engineering, Business & Society (3)

ECE Departmental Admission Criteria (pre-major to admitted major)

ENGL 1110 or higher, MATH 1512 &1522, and at least 18 credit hours of MATH and Science-based courses (technical courses) with a minimum 2.5 GPA in these courses. A 2.3 cumulative GPA is also required. Admission is automatic upon completion of criteria.
* Denotes courses that qualify towards ECE departmental admission
Students must be admitted as ECE degree seeking to take 300 and 400-level courses.

Computer Engineering Upper Division Requirements (49 Credit Hours)

ECE 300 Advanced Engineering Mathematics (4)
ECE 314L Signals & Systems (4)
ECE 321L Electronics I (4)
ECE 330 Software Design (3)
ECE 331 Data Structures & Algorithms (3)
ECE 335 Integrated Software Systems (3)
ECE 338 Intermediate Logic Design (3)
ECE 340 Probabilistic Methods (3)
ECE 341 Intro to Communication Systems (3)
ECE 344L Microprocessors (4)
ECE 419 Senior Design I (3)
ECE 420 Senior Design II (3)
ECE 437 Operating Systems (3)
ECE 440 Computer Networks (3)
ECE 400-level elective (3)

Math sequencing to reach MATH 1512 Calculus I

The four-year plan assumes students will start off at MATH1512 but it is more often the case that students will begin at a different math level. Here are all of the relevant courses UNM offers that lead to 1512:
FYEX 1010 Foundational Math→MATH 1215 Intermediate Algebra → MATH 1220 College Algebra → 1250 Trig & Precalc (or both 1230 Trigonometry and 1240 Pre-calculus) →MATH 1512 Calculus I