CIVIL ENGINEERING - BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Requirements (126 Credits)

In addition to the university requirements for graduation, all students including transfers must satisfy the requirements contained in the academic policies for the NMSU College of Engineering. Students must have a 2.0 grade-point average in all departmental courses and all prerequisites and co-requisites must be taken as required. If a student takes a class and a co-requisite for that class at the same time and does not achieve a grade of C- or better in the co-requisite, the student may take no further classes for which the course or the co-requisite are prerequisite. A student who completes a class three times without achieving a grade of C- or better will be dismissed from the Civil Engineering program, and not allowed to take any Civil Engineering courses from the department.

Students must complete all University degree requirements, which include the following: General Education requirements, Viewing a Wider World requirements, and elective credits to total at least 126 credits with 48 credits in courses numbered 300 or above. Developmental coursework will not count towards the degree requirements or elective credits, but may be needed for enrollment in the necessary English and Mathematics coursework.

Prefix	Title	Credits
General Education		
Area I: Communications		
English Composition - Level 1		
ENGL 1110G	Composition I	4
or ENGL 1110H	Composition I Honors	
English Composition - Level 2		
ENGL 2210G	Professional and Technical Communication	3
or ENGL 2210H	Professional and Technical Communication	
Oral Communications		
COMM 1115G	Introduction to Communication	3
or HNRS 2175G	Introduction to Communication Honors	
Area II: Mathematics		
MATH 1511G	Calculus and Analytic Geometry I [2]	4
or MATH 1511H	Calculus and Analytic Geometry I Honors	
Area III/IV: Laboratory Sciences and Social/Behavioral 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
ECON 2110G	Macroeconomic Principles	3
or ECON 2120G	Principles of Microeconomics Honors	
or ECON 2110H	Principles of Macroeconomics Honors	
or ECON 2120H	Principles of Microeconomics Honors	
Area V: Humanities [1]		*3*
Area VI: Creative and Fine Arts [1]		*3*
General Education Elective		
MATH 1521G	Calculus and Analytic Geometry II (Departmental/College Requirement)	4
or MATH 1521H	Calculus and Analytic Geometry II Honors	
Viewing A Wider World [3]		**6**
Departmental/College Requirements		
Mathematics		
MATH 2530G	Calculus III	3
MATH 3160	Introduction to Ordinary Differential Equations	3
STAT 3110	Statistics for Engineers and Scientists	3
or I E 311	Engineering Data Analysis	
Natural Science		
GEOL 1110G	Physical Geology	4
PHYS 1320G & PHYS 1320L	Calculus -Based Physics II and Calculus -Based Physics II Lab	4
or CHEM 1225G	General Chemistry II Lecture and Laboratory for STEM Majors	
Technical		
ENGR 190	Introduction to Engineering Mathematics	4
ENGR 233	Engineering Mechanics I	3
ENGR 234	Engineering Mechanics II	3
E T 109	Computer Drafting Fundamentals	3
SUR 222	Introduction to Geomatics	3
Civil Engineering		
C E 151	Introduction to Civil Engineering	3
C E 256 & 256 L	Environmental Engineering and Science and Environmental Science Laboratory	4
C E 301	Mechanics of Materials	3
C E 311	Civil Engineering Materials	3
C E 315	Structural Analysis	4
C E 331 & 331 L	Fluid Mechanics and Hydraulics and Fluid Mechanics and Hydraulics Laboratory	4
C E 356	Fundamentals of Environmental Engineering	3
C E 357	Soil Mechanics	3
C E 382	Hydraulic and Hydrologic Engineering	3
C E 445	Reinforced Concrete Design	3
C E 457	Foundation Design	3
C E 471	Transportation Engineering	3
C E 477	Engineering Economics and Construction Management	3
C E 497	Senior Seminar	1
Elective Courses		
Choose two from the following:		6
A EN 459	Groundwater, Wells & Pumps	
A EN 478	Irrigation and Drainage Engineering	
C E 444	Elements of Steel Design	
C E 452	Geohydrology	
C E 454	Wood Design	
C E 455	Masonry Design	
C E 460	Site Investigation	
C E 469	Structural Systems	
C E 470	Design of Municipal and Hazardous Waste Landfills	
C E 479	Pavement Analysis and Design	
C E 482	Hydraulic Structures	
C E 483	Surface Water Hydrology	
C E 485	Design of Earth Dams	
C E 510	Introduction to Nondestructive Testing	
C E 544	Advanced Design of Steel Structures	
C E 545	Advanced Concrete Design	
ENVE 450	Aquatic Chemistry	

ENVE 451	Unit Processes/Operation of Water Treatment	
ENVE 452	Unit Processes/Operation of Wastewater Treatment	
ENVE 456	Environmental Engineering Design	
ENVE 487	Air Pollution Control Systems Design	
Capstone Design Course		
C E 481	Civil Engineering Capstone Design	3
Second Language: (not required)		
Electives, to bring the total credits to 126		**0**
Total Credits		**126**

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

2 MATH 1511G Calculus and Analytic Geometry I is required for the degree but students may need to complete prerequisite(s) prior to enrolling in this course depending on math placement.

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.

A Suggested Plan of Study for Students

This roadmap assumes student placement in MATH 1511G Calculus and Analytic Geometry I or MATH 1511H Calculus and Analytic Geometry I Honors and ENGL 1110G Composition I or ENGL 1110H Composition I Honors. 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		**Credits**
C E 151	Introduction to Civil Engineering [1]	3
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors [2]	4
ENGL 1110G or ENGL 1110H	Composition I [2] or Composition I Honors	4
ENGR 190	Introduction to Engineering Mathematics [3]	4
	Credits	**15**
Spring		
E T 109	Computer Drafting Fundamentals [4]	3
GEOL 1110G	Physical Geology [3]	4
MATH 1511G or MATH 1511H	Calculus and Analytic Geometry I [2, 5] or Calculus and Analytic Geometry I Honors	4
PHYS 1310G & PHYS 1310L	Calculus -Based Physics I and Calculus -Based Physics I Lab [2]	4
	Credits	**15**
Second Year		
Fall		
COMM 1115G or HNRS 2175G	Introduction to Communication [2] or Introduction to Communication Honors	3
ECON 2110G or ECON 2120G or ECON 2110H or ECON 2120H	Macroeconomic Principles [2] or Principles of Microeconomics Honors or Principles of Macroeconomics Honors or Principles of Microeconomics Honors	3
ENGL 2210G or ENGL 2210H	Professional and Technical Communication [2] or Professional and Technical Communication	3
ENGR 233	Engineering Mechanics I [2]	3
MATH 1521G or MATH 1521H	Calculus and Analytic Geometry II [2] or Calculus and Analytic Geometry II Honors	4
	Credits	**16**
Spring		
C E 256 & 256 L	Environmental Engineering and Science and Environmental Science Laboratory [3]	4
C E 301	Mechanics of Materials [2]	3
C E 331	Fluid Mechanics and Hydraulics	3
C E 331 L	Fluid Mechanics and Hydraulics Laboratory	1
MATH 2530G	Calculus III [2]	3
SUR 222	Introduction to Geomatics [3]	3
	Credits	**17**
Third Year		
Fall		
C E 315	Structural Analysis [3]	4
C E 356	Fundamentals of Environmental Engineering [3]	3
ENGR 234	Engineering Mechanics II	3
STAT 3110 or I E 311	Statistics for Engineers and Scientists [3] or Engineering Data Analysis	3
Select a General Education Area V (Humanities) Course [1, 5]		3
	Credits	**16**
Spring		
C E 311	Civil Engineering Materials [3]	3
C E 357	Soil Mechanics [3]	3
C E 382	Hydraulic and Hydrologic Engineering [3]	3
PHYS 1320G & PHYS 1320L or CHEM 1225G	Calculus -Based Physics II [2] or General Chemistry II Lecture and Laboratory for STEM Majors	4
Select a General Education Area VI (Creative and Fine Arts) Course [1, 6]		3
	Credits	**16**
Fourth Year		
Fall		
C E 445	Reinforced Concrete Design [3]	3
C E 477	Engineering Economics and Construction Management [7]	3
MATH 3160	Introduction to Ordinary Differential Equations [2]	3
Select a A EN, C E, or ENVE Elective Course [3, 8]		3
Select a Viewing a Wider World (VWW) Course [1, 9]		3
	Credits	**15**
Spring		
C E 457	Foundation Design [10]	3
C E 471	Transportation Engineering [10]	3
C E 481	Civil Engineering Capstone Design	3
C E 497	Senior Seminar [3]	1
Select a A EN, C E, or ENVE Elective Course [3, 8]		3
Select a Viewing a Wider World (VWW) Course [1, 9]		3
	Credits	**16**
	Total Credits	**126**

1 Courses are typically taught in the Fall semester.

2 Courses are typically taught in the Fall, Spring and Summer semesters.

3 Courses are typically taught in the Fall and Spring semesters.

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

[5] Math Placement: MATH 1511G Calculus and Analytic Geometry I is the starting Math course for the degree but students may need to complete any prerequisites prior to enrolling in this course depending on math placement.

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

[7] Courses are typically taught in the Fall and Summer semesters.

[8] See your advisor for more detailed information about selecting elective courses that are approved to fulfill this requirement.

[9] Courses are typically taught in the Spring semester.