CIVIL ENGINEERING TECHNOLOGY - BACHELOR OF SCIENCE IN ENGINEERING TECHNOLOGY

The **Civil Engineering Technology** (CET) program at NMSU will prepare graduates with the technical and managerial skills necessary to enter careers in planning, designing, constructing, and operating the built environment and global infrastructure. Graduates with the baccalaureate degree have strengths in their knowledge of design, construction, testing, and operation of buildings and infrastructure with the ability to produce and utilize construction documents, analyze and design systems, specify project methods and materials, perform cost estimates and analyses, and manage technical activities in support of civil projects. Graduates from our ABET-accredited CET program can pursue professional licensure and become professional engineers.

The **Civil Engineering Technology** program is accredited by the Engineering Technology Accreditation Commission of ABET, https://www.abet.org (https://www.abet.org/), under the General Criteria and Program Criteria for *Civil Engineering Technology and Similarly Named Programs*.

Concentrations

- Renewable Energy Technologies (https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/engineering-technology-civil-renewable-energy-tech-bachelor-science-engineering-technology/)
- Transportation Technology (https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/engineering-technology-civil-transportation-tech-bachelor-science-engineering-technology/)

Minors

- Renewable energy (https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/renewable-energy-technologies-undergraduate-minor/)
- Geomatics (https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/geomatics-undergraduate-minor/)

Types of jobs that graduates pursue in this field

- Civil Engineer
- Construction Manager
- Project Engineer
- Project Manager
- Design Engineer
- Construction Inspector
- Owner
- Estimator
- Distribution and Sales

Civil Engineering Technology- (No Concentration)

Students must complete all University degree requirements, which include General Education requirements, Viewing a Wider World requirements, and elective credits to total at least 123 credits with 48 credits in courses numbered 300 or above. Developmental coursework will not count towards the degree requirements and/or elective credits but may be needed to take the necessary English and Mathematics coursework.

Prefix	Title	Credits
General Education		
Area I: Communications		
English Composition - Level 1		*4*
ENGL 1110G	Composition I	
English Composition - Level 2		*3*
ENGL 2210G	Professional and Technical Communication Honors	
Oral Communication		*3*
COMM 1115G	Introduction to Communication	
Area II: Mathematics		
MATH 1511G	Calculus and Analytic Geometry I [1]	3-4
or MATH 1435	Applications of Calculus I	
Area III: Laboratory Sciences		*8*
CHEM 1120G	Introduction to Chemistry Lecture and Laboratory (non majors)	
Choose one sequence from the following for four credits:		
PHYS 1230G & PHYS 1230L	Algebra-Based Physics I and Algebra-Based Physics I Lab	
PHYS 1310G & PHYS 1310L	Calculus -Based Physics I and Calculus -Based Physics I Lab	
Area IV: Social/Behavioral Sciences [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 [1]	3-4
or MATH 1440	Applications of Calculus II	
Viewing A Wider World [3,4]		**6**
Departmental/College Requirements		
A ST 311	Statistical Applications	3
E T 101	Introduction to Engineering Technology and Geomatics	1
E T 109	Computer Drafting Fundamentals	3
E T 143	Civil Drafting Fundamentals	3
E T 154	Construction Methods and Communications	3
E T 254	Concrete Technology	3
E T 308	Fluid Technology	3
E T 308 L	Fluid Technology Lab	1
E T 310	Applied Strength of Materials	3
E T 310 L	Applied Strength of Materials Lab	1
E T 332	Applied Design of Structures I	4
E T 354	Soil and Foundation Technology	4
E T 355	Site/Land Development and Layout	3
E T 410	Senior Seminar	1
E T 412	Highway Technology	3
E T 418	Applied Hydraulics	3
E T 421	Senior Project	3

E T 432	Applied Design of Structures II	4
E T 459	Construction Technology and Management	3
ENGR 120	DC Circuit Analysis	4
ENGR 190	Introduction to Engineering Mathematics	4
ENGR 233	Engineering Mechanics I	3
ENGR 234	Engineering Mechanics II	3
I E 451	Engineering Economy	3
SUR 222	Introduction to Geomatics	3
Geomatics/Surveying Elective (choose 1 course from the list below)		*3*
SUR 328	Construction Surveying & Automation Technologies	
SUR 351	Spatial Data Adjustment I	
SUR 361	Geodesy/Geodetic Control Surveying	
Technical Electives (choose 3 courses from the list below) [4]		*9*
E T 381	Renewable Energy Technologies	
E T 382	Solar Energy Technologies	
E T 384	Wind and Water Energy Technologies	
E T 386	Sustainable Construction and Green Building Design	
E T 472	Intelligent Transportation Systems (ITS)	
Second Language: (not required)		
Electives, to bring the total credits to 123		**0**
Total Credits		**123-125**

1 Students may need to take any prerequisites needed to enter MATH 1511G Calculus and Analytic Geometry I/MATH 1435 Applications of Calculus I or MATH 1521G Calculus and Analytic Geometry II/MATH 1440 Applications of Calculus II before enrolling in either option of coursework.
**For students wishing to pursue a technical master's degree, MATH 1511G Calculus and Analytic Geometry I and MATH 1521G Calculus and Analytic Geometry II are recommended and will satisfy both the Area II and General Education Elective requirements. Students who take MATH 1435 Applications of Calculus I and MATH 1440 Applications of Calculus II, will need to have an exception made for their degree audit.*

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 Concentrations are *"optional"* educational sequences that students may chose to focus on particular areas related to CET. Concentrations may often be done without additional credits by judicious use of electives and other optional course requirements.

A Suggested Plan of Study for Students

This roadmap assumes student placement in MATH 1511G Calculus and Analytic Geometry I and ENGL 1110G Composition I. 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**
ENGL 1110G	Composition I	4
E T 101	Introduction to Engineering Technology and Geomatics	1
E T 154	Construction Methods and Communications	3
ENGR 120	DC Circuit Analysis	4
ENGR 190	Introduction to Engineering Mathematics	4
	Credits	**16**
Spring		
E T 109	Computer Drafting Fundamentals	3
MATH 1435 or MATH 1511G	Applications of Calculus I [1] or Calculus and Analytic Geometry I	3-4
CHEM 1120G	Introduction to Chemistry Lecture and Laboratory (non majors)	4
Area III: Lab Sciences (Choose one)		4
PHYS 1230G & PHYS 1230L	Algebra-Based Physics I and Algebra-Based Physics I Lab	
PHYS 1310G & PHYS 1310L	Calculus -Based Physics I and Calculus -Based Physics I Lab	
	Credits	**14-15**
Second Year		
Fall		
COMM 1115G	Introduction to Communication	3
E T 143	Civil Drafting Fundamentals	3
ENGL 2210G	Professional and Technical Communication Honors	3
ENGR 233	Engineering Mechanics I	3
MATH 1440 or MATH 1521G	Applications of Calculus II [1] or Calculus and Analytic Geometry II	3
	Credits	**15**
Spring		
Area IV: Social Behavior Sciences [2]		3
E T 254	Concrete Technology	3
E T 308	Fluid Technology	3
E T 308 L	Fluid Technology Lab	1
ENGR 234	Engineering Mechanics II	3
SUR 222	Introduction to Geomatics	3
	Credits	**16**
Third Year		
Fall		
Area V: Humanities [2]		3
E T 310	Applied Strength of Materials	3
E T 310 L	Applied Strength of Materials Lab	1
E T 354	Soil and Foundation Technology	4
Viewing a Wider World [3]		3
	Credits	**14**
Spring		
Area VI: Creative and Fine Arts [2]		3
E T 332	Applied Design of Structures I	4
E T 355	Site/Land Development and Layout	3
Surveying Elective Course (from pre-approved list) [4]		3
Technical Elective Course (from pre-approved list) [5]		3
	Credits	**16**
Fourth Year		
Fall		
A ST 311	Statistical Applications	3

E T 432	Applied Design of Structures II	4
E T 459	Construction Technology and Management	3
I E 451	Engineering Economy	3
Technical Elective Course (from pre-approved list) [5]		3
	Credits	**16**
Spring		
E T 410	Senior Seminar	1
E T 412	Highway Technology	3
E T 418	Applied Hydraulics	3
E T 421	Senior Project	3
Technical Elective Course (from pre-approved list) [5]		3
Viewing a Wider World [3]		3
	Credits	**16**
	Total Credits	**123-124**

1. Students may need to take any prerequisites needed to enter MATH 1511G Calculus and Analytic Geometry I/MATH 1435 Applications of Calculus I or MATH 1521G Calculus and Analytic Geometry II/MATH 1440 Applications of Calculus II before enrolling in either option of coursework.
   **For students wishing to pursue a technical master's degree, MATH 1511G Calculus and Analytic Geometry I and MATH 1521G Calculus and Analytic Geometry II are recommended and will satisfy both the Area II and General Education Elective requirements. Students who take MATH 1435 Applications of Calculus I and MATH 1440 Applications of Calculus II, will need to have an exception made for their degree audit.*
2. See the General Education (https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/) section of this 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 this catalog for a full list of courses
4. **Surveying Electives:** SUR 328 Construction Surveying & Automation Technologies, SUR 351 Spatial Data Adjustment I, or SUR 361 Geodesy/Geodetic Control Surveying
5. **Technical Elective Courses:** E T 381 Renewable Energy Technologies, E T 382 Solar Energy Technologies, E T 384 Wind and Water Energy Technologies, E T 386 Sustainable Construction and Green Building Design, E T 472 Intelligent Transportation Systems (ITS), E T 480 Innovation and Product Development, and any SUR 300+ (in addition to the required Surveying Elective).