

CIVIL ENGINEERING, MASTER OF SCIENCE

Specific Admission Requirements

- A 4-year undergraduate degree in any engineering discipline with the minimum GPA of 3 is required.
- No more than 9 credit hours of graduate coursework may be accepted as transfer credit from another institution with a minimum grade of B.

Student Learning Outcomes

1. An ability to identify, formulate, and solve complex and advance civil engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to apply civil engineering design to an advanced level to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. An ability to recognize ethical and professional responsibilities in complex and advanced engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
4. An ability to acquire and apply new knowledge in broader civil engineering areas as needed using appropriate learning and research strategies.

Outcomes Assessment Activities

- Students will be assessed and evaluated with an array of activities such as critical thinking assignment, homework, class exams, semester assignment, final exams and so on.

Specific Program Requirements

Requirement	Credits
Major Requirements	15
Major Electives	9
Thesis/Non-Thesis Requirements	6-9
Total Credits	30-33

Major Requirements

Course	Title	Credits
Select from the following: Must have advisor approval.		
CE 500	Research Methods for Engineering	3
CE 504	Structural Steel Design	3
CE 505	Reinforced Concrete Design	3
CE 507	Cyber Security for Civil Infrastructures	3
CE 512	Hydrology	3
CE 515	Water & Sewer System Design	3
CE 521	Geotechnical Engineering II	3
TENG 505	Multimodal Transportation Systems	3
TENG 510	Transportation Economy & Finance	3
TENG 530	Traffic Engineering	3
TENG 532	Pavement Engineering	3

TENG 540	Railway Transportation	3
TENG 560	Hydrogen Fuel	3

Electives

Course	Title	Credits
Select from the following: Select courses not used to fulfill major requirements. Must have advisor approval.		
CE 591	Special Topics	1
CE 592	Research	1
CE 595	Independent Study	1
CE 598	Internship	1
EN 511	Structural Engineering	3
EN 513	Artificial Intelligence	3
EN 520	Simulation Experiments	4
EN 543	Quality Control and Reliability	3
EN 577	Operations Planning and Control	3

Thesis Option

Course	Title	Credits
CE 599	Thesis	6

Non-Thesis Option

Students must take an additional 9 credits with advisor approval.

- Courses must be 500-level or higher.
- Courses must have CE, EN, or TENG prefix.

Planning Sheet

Disclaimer: The Planning Sheet is designed as a guide for students planning their course selections. The information on this page provides only a suggested schedule. Actual course selections should be made with the advice and consent of an academic advisor. While accurately portraying the information contained in the college catalog, this form is not considered a legal substitute for that document. Students should become familiar with the catalog in effect at the time in which they entered the institution.

Course	Title	Credits
Year 1		
Fall		
Select from the following with advisor approval:		9-12
CE 505	Reinforced Concrete Design	
CE 515	Water & Sewer System Design	
TENG 505	Multimodal Transportation Systems	
TENG 560	Hydrogen Fuel	
Elective		
Credits		9-12
Spring		
Select from the following with advisor approval:		9-12
CE 504	Structural Steel Design	
CE 512	Hydrology	
CE 521	Geotechnical Engineering II	
TENG 510	Transportation Economy & Finance	
Elective		
Credits		9-12
Year 2		
Fall		
Select from the following with advisor approval:		9-12

CE 507	Cyber Security for Civil Infrastructures	
TENG 532	Pavement Engineering	
Elective		
Elective (For non-thesis option)		
Credits		9-12
Spring		
Select from the following with advisor approval:		9-12
TENG 530	Traffic Engineering	
TENG 540	Railway Transportation	
Elective (For non-thesis option)		
Elective (For non-thesis option)		
CE 599	Thesis ((For thesis option))	
Credits		9-12
Total Credits		36-48