Civil Engineering

Courses By Area: Structural & Geotechnical

The following is the listing of potential courses that could be taken to meet the Department's requirements. Before taking a course you should discuss with your advisor to see if they meet your curriculum plan. If a student's advisor and supervisory committee wish to vary from the course requirements a formal petition must be submitted to the Graduate Studies Committee.

Core Courses		
As part of the 15 CORE Credits, structural and geotechnical students should take at least one course from each one of the following areas. The requirement can be partially or fully waived if the student passed at least one of the courses (or equivalent) in undergraduate studies. The waiver will not reduce the minimum credit course requirements for the MS degree.		
Structures Area		Historical Offering
CVEEN 6210	Structural Analysis II	Every Spring.
CVEEN 6220	Concrete Design II	Every Spring.
CVEEN 6230	Steel Design II	Every Fall.
CVEEN 6250	Structural Dynamics	Every Fall.
Geotechnics Area		
CVEEN 5305	Intro to Foundation Engineering	Every Fall.
CVEEN 6310	Foundation Engineering	Every Fall.
CVEEN 6330	Soil Dynamics and Geotechnical Earthquake Eng.	Every Spring.
Core Courses		
CVEEN 5305 *	Intro to Foundation Engineering	Every Fall.
CVEEN 6210 *	Structural Analysis II	Every Spring.
CVEEN 6220 *	Concrete Design II	Every Spring.
CVEEN 6230 *	Steel Design II	Every Fall.
CVEEN 6240	Masonry/ Timber Design	Every Fall.
CVEEN 6250 *	Structural Dynamics	Every Fall.
CVEEN 6270	Computer Aided Structural Analysis	Rarely offered.
CVEEN 6310 *	Foundation Engineering	Every Fall.
CVEEN 6330 *	Soil Dynamics and Geotechnical Earthquake Eng.	Every Spring.
CVEEN 6340	Advanced Geotechnical Testing	Rarely offered.
CVEEN 6510	Highway Design	Every Spring
CVEEN 6525	Highway and Traffic Engineering	Rarely offered.
CVEEN 6570	Pavement Design	Every Fall.
CVEEN 6790	Advanced Computer Aided Construction	Every Spring.
CVEEN 7225	Prestressed Concrete Design	Offered every ~3 yrs Fall ('18, '21,'24).
CVEEN 7250	Structural Earthquake Engineering	Offered every ~3 yrs Fall ('17, '21,'24).
CVEEN 7255	Advanced Dynamics of Structures	Offered every ~2 yrs Fall ('20, '22)
CVEEN 7310	Advanced Foundation Engineering	Rarely offered.
CVEEN 7360	Advanced Soil Mechanics	Rarely offered.
CVEEN 7450	Carbon Capture and Store Transportation	Rarely offered. Offered Sp '24.
CVEEN 7520	Transportation Safety	Rarely offered.
CVEEN 7560	Advanced Construction Materials	Rarely offered.
* Indicates the course is also listed above.		

(Reviewed by group, August 2022. Reviewed by advisor July 1, 2024.)

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Elective Courses	
The following are courses that have been used as elective courses by students studying structural or geotechnical engineering. Other courses may be approved by the Supervisory Committee. ** NOTE: No more than 9 credits can be taken from outsider of the department (not a CVEEN course listing.)	
CVEEN 6225	Concrete Material Science
CVEEN 6235	Bridge Design
CVEEN 6710	Cost Estimating and Proposal Writing
CVEEN 6720	Project Scheduling
CVEEN 6730	Project Management and Contract Administration
CVEEN 6750	Engineering Law & Contracts
CVEEN 7260	Seismic Rehab. of Reinforced Concrete Buildings
CS 6300	Artificial Intelligence
CS 6610	Interactive Computer Graphics
GEO 5075	Introduction to Geological Engineering
GEO 5150	Geological Engineering Design
GEO 5200	Depositional Environments
GEO 5210	Seismology I: Tectonophysics and Elastic Waves
GEO 5220	Seismology II: Seismic Imaging
GEO 5320	Signal Processing in the Geosciences
GEO 6350	Groundwater
GEO 6360	Fluid Mechanics of Earth Materials
GEO 6370	Enviro. Partitioning for Engineers and Scientists
GEO 6660	Geochemistry
MATH 6420	Partial Differential Equations
MATH 6610	Analysis of Numerical Methods I
MATH 6620	Analysis of Numerical Methods II
ME EN 6300	Advanced Mechanics of Materials
ME EN 6400	Vibrations
ME EN 6510	Applied Finite Element Analysis
ME EN 6520	Mechanics of Composite Materials
ME EN 7530	Fracture and Fatigue
ME EN 7540	Advanced Finite Elements
MET E 6300	Alloy and Material Design
MET E 6450	Mechanical Behavior of Metals
MET E 6600	Corrosion Fundamentals and Minimization
MG EN 5150	Mechanics of Materials
MG EN 5270	Landslides and Slope Stability
ME EN 5290	Intro. to Finite Element and other Numerical Models in Geomechanics
MSE 6001	Engineering Materials