

AREAS OF SPECIALIZATION WITHIN CEE & DESIGN CREDITS FOR CEE COURSES

The following lists of courses have been developed to aid in guiding students who may choose to emphasize one or more areas of study within CEE. This list may also be used to aid students in selecting courses with design credits.

Required Courses

Course Number	Course Title	Prerequisites	Degree Credits	Design Credits
EMA/ME 307	Mechanics of Materials Lab	EMA/ME 306 or con reg	1	0.5
CEE 291	Problem Solving Using Computer Tools	EMA 202 or 304	3	0.5
CEE 310	Fluid Mechanics	Math 234 & EMA 202	3	0.0
CEE 311	Hydroscience	CEE 310	3	1.0
CEE 320	Environmental Engineering	1 year college chemistry	3	0.0
CEE 330	Soil Mechanics	EMA 303 or 304 or con reg	4	1.0
CEE 340	Structural Analysis	EMA 303 & ME 307 or con reg	4	1.5
CEE 370	Transportation Engineering	Stats 324 or con reg	3	0.5
CEE 395	Materials for Constructed Facilities	EMA 303 & 307	3	1.0
CEE 498	Construction Project Management	Jr. status or instructor consent	3	0.5
CEE 578 pre-req	See page Error! Bookmark not defined. for complete list	See page Error! Bookmark not defined.	3	3.0
CEE 578	Senior Capstone Design	A course with 3 design credits	4	4.0
			Total	13.5

Construction Engineering and Management

Course Number	Course Title	Prerequisites	Degree Credits	Design Credits
CEE 491	Legal Aspects of Engineering	Senior Status or instructor consent	3	0.5
CEE 492	Integrated Project Estimating and Scheduling	Junior Status	3	0.8
CEE 494	Civil & Environmental Engineering Decision Making	Math 221 or instructor consent	3	1.0
CEE 496	Electrical Systems for Construction	Physics 202	3	0.0
CEE 497	Mechanical Systems for Construction	Physics 202	3	3.0
CEE 596	Constructability Analysis	Junior Status	3	1.0
CEE 698	Special Topics: Architectural Design for Construction	--	3	0.0
CEE 698	Special Topics: Building Information Modeling	--	2	0.0
CEE 698	Special Topics: Construction Field Observation	--	1	0.0
CEE 698	Special Topics: Leadership Development for Project Managers	--	1-4	0.0
CEE 698	Special Topics: Research Methods-CEM	--	1	0.0
CEE 698	Special Topics: Sustainability Principles and Practices for Construction	--	3	0.0

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Environmental Engineering

Course Number	Course Title	Prerequisites	Degree Credits	Design Credits
CEE 322	Environmental Engineering Processes	CEE 320	3	0.0
CEE 372	On-Site Waste Water Treatment and Dispersal	Chemistry 103	2	0.0
CEE 422	Elements of Public Health Engineering	--	3	0.0
CEE 423	Air Pollution Effects, Measurement and Control	Senior Status	3	2.0
CEE 424	Environmental Engineering Laboratory	Chemistry 103 or equivalent	2	0.0
CEE 426	Design of Wastewater Treatment Plants	CEE 310 or 316 and 320 or instructor consent	3	3.0
CEE 427	Solid and Hazardous Waste Engineering	CEE 310 or instructor consent	3	3.0
CEE 428	Water Treatment Plant Design	CEE 310, 320	3	3.0
CEE 500	Water Chemistry	Chemistry 103, 104, 221, or equivalent, instructor consent	3	0.0
CEE 501	Water Analysis-Intermediate	Chemistry 223	2	0.0
CEE 503	Water Analysis-Intermediate Lab	--	1	0.0
CEE 522	Hazardous Waste Management	CEE 320 or instructor consent	3	3.0
CEE 609	Special Topics: Sol-Gel Chemistry	Instructor consent	1-3	0.0
CEE 609	Special Topics: The Chemistry of Air Pollution	Instructor consent	1-3	0.0
CEE 619	Special Topics	--	1-3	0.0
CEE 629	Special Topics in Environmental Engineering	Senior status	1-3	0.0

Geoengineering

Course Number	Course Title	Prerequisites	Degree Credits	Design Credits
CEE 530	Seepage & Slopes	CEE 330	3	3.0
CEE 531	Retaining Structures	CEE 330, 291, or instructor consent	3	3.0
CEE 532	Foundations	CEE 330, 291, or instructor consent	3	3.0
CEE 534	Field Methods in Geological Engineering	CEE 330 & GLE 474 or instructor consent	3	0.0
CEE 631	Toxicants in the Environment: Sources, Distribution, Fate & Effects	Chem. 343 & 345 or equiv.; Chem 561 or equiv.; Physics 103 & 104 or equiv.; Math 211; or instructor consent	3	0.0
CEE 633	Waste Geotechnics	CEE 330 & 320 or instructor consent	3	0.0
CEE 635	Remediation Geotechnics	--	3	2.0

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Geospatial Information Engineering

Course Number	Course Title	Prerequisites	Degree Credits	Design Credits
CEE 357	An Introduction to Geographic Information Systems	Intro course in environmental studies or mapping science & an intro course in computer programming or computer concepts	4	1.0
CEE 444	Practical Applications of GPS Surveying		2	0.0
CEE 556	Remote Sensing Digital Image Processing		3	1.0

Structural Engineering

Course Number	Course Title	Prerequisites	Degree Credits	Design Credits
CEE 440	Structural Analysis II	CEE 340	3	0.5
CEE 442	Wood Structures I	CEE 340	3	3.0
CEE 445	Steel Structures I	CEE 340	3	3.0
CEE 447	Concrete Structures I	CEE 340	3	3.0
CEE 543	Precast Concrete	CEE 447	3	0.0
CEE 545	Steel Structures II	CEE 445	3	0.0
CEE 547	Concrete Structures II	CEE 447	3	3.0
CEE 614	Highway Bridges	CEE 445 and CEE 447	3	0.0
CEE 649	Special Topics: Art in Engineering Architecture	--	1-3	0.0
CEE 649	Special Topics: Sustainable Energy Building Design	--	3	1-3

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Transportation Engineering

Course Number	Course Title	Prerequisites	Degree Credits	Design Credits
CEE 570	Environmental Impact of Transportation Systems	--	3	0.0
CEE 571	Urban Transportation Planning	CEE 370 or instructor consent	3	1.0
CEE 573	Geometric Design of Transport Facilities	CEE 370	3	3.0
CEE 574	Traffic Control	CEE 370	3	3.0
CEE 576	Advanced Pavement Design	CEE 375	3	3.0
CEE 679	Special Topics: Advanced Topics in Traffic Flow and Safety	Instructor consent	3	0.0
CEE 679	Special Topics: Advanced Transportation Demand and Supply Modeling	Instructor consent	3	0.0
CEE 679	Special Topics: Travel Behavior Analysis	Instructor consent	3	0.0
CEE 695	Design and Construction of Bituminous Mixtures	CEE 395 or CEE 575	1-3	0.0

Water Resources Engineering

Course Number	Course Title	Prerequisites	Degree Credits	Design Credits
CEE 315	Hydrology	CEE 291 & CEE 311 or instructor consent	3	0.0
CEE 410	Hydraulic Engineering	CEE 310 & 311 or instructor consent	3	1.5
CEE 411	Open Channel Hydraulics	CEE 311	3	1.5
CEE 412	Groundwater Hydraulics	--	3	0.0
CEE 414	Hydrologic Design	CEE 315 or instructor consent	3	3.0
CEE 514	Coastal Engineering	CEE 311 or instructor consent	3	1.5
CEE 618	Special Topics: Environmental Fluid Mechanics	Varies by topic	1-3	0.0
CEE 618	Special Topics: Field Assessment of Changing Climate on Great Lakes	Varies by topic	3	0.0
CEE 618	Special Topics: Sediment Processes and Engineering	Varies by topic	1-3	0.0
CEE 619	Special Topics in Hydrology	Instructor consent	1-3	0.0