

**CIVIL ENGINEERING ELECTIVES**  
**Spring 2014**

**CEE ELECTIVES**

- CEE 422 01      Dsgn & Constr Prj Mgt (G. Klanac)  
F 1:00 PM-4:00 PM
- CEE 504 01      Struc Dynamics (E. Toubia)  
TR 4:30 PM- 5:45 PM
- CEE 522 01      Subsur Instg (O. Bilgin)  
TR 5:55-7:10 PM
- CEE 533 01      Theory of Elasticity (S. Donaldson)  
MW 4:50-5:45
- CEE 540 01      Comp Design (T. Whitney)  
MW 5:55-7:10
- CEE 543 01      Analy Mech Cmp Matls (J. Whitney)  
TR 4:30-5:45
- CEE 546 01      Finite Elmnt Anly I (R. Hoffman)  
TR 5:55-7:10
- CEE 550 01      Hwy Geo Design (D. Eustace)  
MW 4:30-5:45
- CEE 560 01      Bio Proc Wastewater (D. Taylor)  
TR 5:55-7:10
- CEE 562 01      Phy & Chm Wastewater (K. Crosson)  
MW 5:55-7:10

CEE 584 01      Open Chl Flow (D. Chase)  
MW 4:30-5:45

CEE 595 01      LEED (N. Turek)  
M 9:00-11:50 AM

### EGM ELECTIVES

EGM 533 01      Theory of Elasticity (S. Donaldson)  
MW 4:30-5:45

EGM 540 01      Composite Design (T. Whitney)  
MW 5:55-7:10

EGM 543 01      Analy Mech Cmp Matls (J. Whitney)  
4:30-5:45

EGM 546 01      Finite Elmnt Anly I (R. Hoffman)  
TR 5:55-7:10

**NOTE: SOME 300 LEVEL MATH, SCIENCE AND NON-CEE ENGINEERING COURSES ARE ACCEPTABLE AS TECHNICAL ELECTIVES WITH CHAIR'S PRIOR APPROVAL.**

Revised 02-27-14

**LISTED BELOW ARE ACCEPTABLE CIVIL AND TECHNICAL ELECTIVES BY SPECIALTY AREA:**

**Highlighted electives available Spring 2014**

Civil Electives	Prerequisites Required for Civil Elective	Technical Electives	Prerequisites for Technical Elective
CEE 421 Construction Engineering		ASI 320 Cities and Energy	
CEE 422 Design and Construction Project Mgt		BIO 395 Global Environmental Policy	Into course to natural sciences
CEE 463 Hazardous Waste Engineering		BIO 409 Ecological Restoration	Permission by instructor
CEE 500 Advanced Structural Analysis	CEE 317 Analysis of Structures II	BIO 444 Plant Diversity	
CEE 501 Structural Analysis by Computer	CEE 317 Analysis of Structures II	BIO 459 Environmental Ecology	BIO 430 or perm
CEE 502 Prestressed Concrete	CEE 412 Design of Concrete Structures	CHM 313 Organic Chemistry I	CHM 124
CEE 503 Intro to Continuum Mechanics	EGM 303 Mechanics II	CHM 314 Organic Chemistry II	CHM 313
CEE 504 Structural Dynamics	EGM 303 Mechanics II CEE 317 Analysis of Structures II	CHM 341 Environmental Chemistry	CHM 314 or perm
CEE 505 Plastic Design of Steel	CEE 411 Design of Steel Structures	CME 490 Intro to Bioengineering	CHM 402 or 451, CME 325 & 365; co-req. CME 406
CEE 507 Masonry Design	CEE 317 Analysis of Structures II	CME 575 Fundamentals of Air Pollution Engr. II	CME 574 or permission
CEE 508 Design of Timber Structures	CEE 317 Analysis of Structures II	ECO 300 Principles of Economics	
CEE 511 Experimental Stress Analysis	EGM 303 Mechanics II	ECO 346 Intermediate Microeconomics Ana	ECO 203
CEE 515 Pavement Design		ECO 347 Intermediate Macroeconomics Ana	ECO 204
CEE 520 Advanced Geotechnical Engr.	CEE 312 Geotechnical Engineering	ECO 445 Public Finance	ECO 203, ECO 204
CEE 522 Subsurface Investigations	CEE 312 Geotechnical Engineering	ECO 471 Labor Economics	ECO 203, ECO 204
CEE 524 Foundation Design	CEE 312 Geotechnical Engineering	ECO 485 Urban and Regional Economics	ECO 203, DSC 211 or MTH 207 ECO 346 recommended
CEE 526 Retaining Structures and Slopes	CEE 312 Geotechnical Engineering	EGM 503 Intro to Continuum Mechanics	EGM 303 Mechanics II
CEE 528 Soil Dynamics and Earthquake Engineering	CEE 312 Geotechnical Engineering	EGM 504 Fundamentals of Fluid Mechanics	
CEE 533 Theory of Elasticity	EGM 303 Mechanics II Co-Req-CEE 503 Intro to Cont Mech	EGM 519 Analytic Dynamics	MTH 219, EGM 202
CEE 534 Theory of Plates and Shells	CEE 533 Theory of Elasticity	EGM 531 Theory of Linear Viscoelasticity	MTH 219, EGM 303
CEE 535 Advanced Mechanical Vibrations	MEE 319 Mechanical Vibrations	EGM 533 Theory of Elasticity	EGM 303 Mechanics II Co-Req-CEE 503 Intro to Cont Mechanics
CEE 539 Theory of Plasticity	CEE 503 or CEE 533	EGM 534 Theory of Plates and Shells	
CEE 540 Composite Design	EGM 303 Mechanics II	EGM 536 Random Vibrations	MEE 319
CEE 541 Exp Mechanics of Composite Materials	EGM 303 Mechanics II	EGM 540 Composite Design	EGM 303 Mechanics II
CEE 543 Anl Mechanics of Composite Materials	EGM 303 Mechanics II	EGM 541 Exp. Mechanics of Composite Mat'ls	EGM 303 Mechanics II
CEE 544 Mechanics of Composite Structures	CEE 543Anl Mech of Comp Mat	EGM 543 Anl Mechanics of Composite Materials	EGM 303 Mechanics II
CEE 546 Finite Element Analysis I	CEE 503 or CEE 533		EGM 543 or permission
CEE 550 Highway Geometric Design	CEE 403 Transportation Engineering	EGM 546 Finite Element Analysis I	EGM 503 or EGM 533
CEE 551 Traffic Engineering	CEE 403 Transportation Engineering	EGM 549 Theory of Elastic Stability	EGM 533
		EGM 552 Boundary Layer Theory	
CEE 552 Intelligent Transportation Systems	CEE 403 Transportation Engineering		
CEE 553 Travel Demand Modeling	CEE 403 Transportation Engineering		
CEE 554 Urban Public Transportation	CEE 403 Transportation Engineering	EGR 330 Engineering Design & Appropriate Technology	
CEE 555 Highway Traffic Safety	CEE 403 Transportation Engineering	EGR 498 – Honors Thesis	
CEE 558 Traffic Engineering Research	CEE 403 Transportation Engineering	ENM 505 Management of Engr Systems I	

Civil Electives	Prerequisites Required for Civil Elective	Technical Electives	Prerequisites for Technical Elective
CEE 560 Wastewater Engineering		ENM 506 Management of Engr Systems II	
CEE 562 Phys. & Chem. Water Wastewater Trtmnt Proc		ENM 517 Legal Aspects - Engineering	
CEE 563 Hazardous Waste Engineering		ENM 521 Operations Research I	3 semesters of calculus
CEE 564 Solid Waste Engineering		ENM 522 Operations Research II	MSC 500
CEE 580 Hydrology and Seepage	CEE 312 Geotechnical Engineering CEE 313 Hydraulics	ENM 523 Optimization I	
CEE 582 Advanced Hydraulics	CEE 313 Hydraulics CEE 333 Water Resources Engineering	ENM 530 Cost & Economic Analysis for Engrs	
		ENM 572 System Simulation	MSC 501 & ENM or MSC 522 or equiv
CEE 584 Open Channel Flow	CEE 312 Geotech Engineering CEE 313 Hydraulics	FIN 301 Business Finance	ECO 203, ACC 207 or ACC 301
CEE 595 LEED Building Design	Instructors Approval Required	GEO 301 Structural Geology	GEO 115, GEO 116, GEO 201
		GEO 302 Glacial Geology	GEO 115, GEO 116
		GEO 303 Field Geology	GEO 115, GEO 116
		GEO 307 Geomorphology	GEO 115, GEO 116
		GEO 450 Applied GIS	
		MEE 319 Mechanical Vibrations	
		MEE 473 Renewable Energy Systems	
		MEE 595 Design for Waste Minimization	
		MGT 301 Organizational Behavior	Junior Standing
		MGT 302 Managerial Skills	Junior Standing
		MSC 500 Probabilistic Methods I	
		MSC 501 Probabilistic Methods II	MSC 500
		MTH 310 Linear Algebra and Matrices	MTH 218
		MTH 367 Statistical Methods I	MTH 169
		MTH 368 Statistical Methods II	MTH 367
		MTH 411 Probability and Statistics I	MTH 218
		MTH 412 Probability and Statistics II	MTH 411
		MTH 413 Probability and Statistics III	MTH 412
		MTH 465 Linear Algebra	MTH 302
		MTH 519-520 Statistical Inference	
		MTH 520 Statistical Inference	
		MTH 543 Linear Models	MTH 368 or equivalent
		SEE 401 Research in Enviro Sustainability	
		SEE 402 Sustainability Research II	
		MEE 420 Energy Efficient Buildings	MEE 410 or approval of MEE chair
		ASI 341 Architectural Visualization	