

## CIVIL ENGINEERING ELECTIVES

Fall 2012

### CEE ELECTIVES

- CEE 421 01      Construction Engineering  
TR 5:55 – 7:10
- CEE 503 01      Intro to Continuum Mechanics  
MW 4:30 – 5:45
- CEE 504 01      Structural Dynamics  
MW 5:55 – 7:10
- CEE 524 01      Foundation Design  
MW 5:55-7:10
- CEE 540 01      Composite Design  
MW 5:55-7:10
- CEE 550 01      Highway Geometric Design  
TR 4:30 – 5:45
- CEE 563 01      Hazardous Waste Engineering  
MW 4:30 – 5:45
- CEE 582 01      Advanced Hydraulics  
MW 4:30 – 5:45
- CEE 595 01      SP: Waste & Wastewater Treatment  
MW 8:00 – 8:50
- CEE 595 02      SP: Subsurface Investigation  
MW 4:30 – 5:45

### EGM ELECTIVES

- EGM 503 01      Intro to Continuum Mechanics  
MW 4:30 – 5:45 (prerequisite EGM 303)
- EGM 540 01      Composite Design  
MW 5:55-7:10 (prerequisite CEE 312)

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

Revised 3-23-12

**LISTED BELOW ARE ACCEPTABLE CIVIL AND TECHNICAL ELECTIVES BY SPECIALTY AREA: Highlighted electives available Fall 2012**

Civil Electives	Prerequisites Required for Civil Elective	Technical Electives	Prerequisites for Technical Elective
<span style="background-color: yellow;">CEE 421 Construction Engineering</span>		ASI 320 Cities and Energy	
CEE 422 Design and Construction Project Mgt		<span style="background-color: yellow;">BIO 395 Global Environmental Policy</span>	Into course to natural sciences
CEE 463 Hazardous Waste Engineering		<span style="background-color: yellow;">BIO 409 Ecological Restoration</span>	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	<span style="background-color: yellow;">CHM 313 Organic Chemistry I</span>	CHM 124
<span style="background-color: yellow;">CEE 503 Intro to Continuum Mechanics</span>	EGM 303 Mechanics II	<span style="background-color: yellow;">CHM 314 Organic Chemistry II</span>	CHM 313
<span style="background-color: yellow;">CEE 504 Structural Dynamics</span>	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	<span style="background-color: yellow;">CME 490 Intro to Bioengineering</span>	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		<span style="background-color: yellow;">ECO 347 Intermediate Macroeconomics Ana</span>	ECO 204
CEE 520 Advanced Geotechnical Engr.	CEE 312 Geotechnical Engineering	ECO 445 Public Finance	ECO 203, ECO 204
<span style="background-color: yellow;">CEE 524 Foundation Design</span>	CEE 312 Geotechnical Engineering	ECO 471 Labor Economics	ECO 203, ECO 204
CEE 533 Theory of Elasticity	EGM 303 Mechanics II Co-Req-CEE 503 Intro to Cont Mech	ECO 485 Urban and Regional Economics	ECO 203, DSC 211 or MTH 207 ECO 346 recommended
CEE 534 Theory of Plates and Shells	CEE 533 Theory of Elasticity	<span style="background-color: yellow;">EGM 503 Intro to Continuum Mechanics</span>	EGM 303 Mechanics II
CEE 535 Advanced Mechanical Vibrations	MEE 319 Mechanical Vibrations	<span style="background-color: yellow;">EGM 504 Fundamentals of Fluid Mechanics</span>	
CEE 539 Theory of Plasticity	CEE 503 or CEE 533	EGM 519 Analytic Dynamics	MTH 219, EGM 202
<span style="background-color: yellow;">CEE 540 Composite Design</span>	EGM 303 Mechanics II	EGM 531 Theory of Linear Viscoelasticity	MTH 219, EGM 303
CEE 541 Exp Mechanics of Composite Materials	EGM 303 Mechanics II	EGM 533 Theory of Elasticity	EGM 303 Mechanics II Co-Req-CEE 503 Intro to Cont Mechanics
CEE 543 Anl Mechanics of Composite Materials	EGM 303 Mechanics II	EGM 534 Theory of Plates and Shells	
CEE 544 Mechanics of Composite Structures	CEE 543Anl Mech of Comp Mat	EGM 536 Random Vibrations	MEE 319
CEE 546 Finite Element Analysis I	CEE 503 or CEE 533	<span style="background-color: yellow;">EGM 540 Composite Design</span>	EGM 303 Mechanics II
<span style="background-color: yellow;">CEE 550 Highway Geometric Design</span>	CEE 403 Transportation Engineering	EGM 541 Exp. Mechanics of Composite Mat'ls	EGM 303 Mechanics II
CEE 551 Traffic Engineering	CEE 403 Transportation Engineering	EGM 543 Anl Mechanics of Composite Materials	EGM 303 Mechanics II
		EGM 544 Mechanics of Composite Structures	EGM 543 or permission
CEE 552 Intelligent Transportation Systems	CEE 403 Transportation Engineering	EGM 546 Finite Element Analysis I	EGM 503 or EGM 533
CEE 558 Traffic Engineering Research	CEE 403 Transportation Engineering	EGM 549 Theory of Elastic Stability	EGM 533
CEE 560 Wastewater Engineering		EGM 552 Boundary Layer Theory	
CEE 562 Phys. & Chem. Water Wastewater Trtmnt Proc		<span style="background-color: yellow;">EGR 202 Engineering Thermodynamics</span>	MTH 168
<span style="background-color: yellow;">CEE 563 Hazardous Waste Engineering</span>		<span style="background-color: yellow;">EGR 203 Electrical and Electronic Circuits</span>	MTH 168
CEE 564 Solid Waste Engineering		<span style="background-color: yellow;">EGR 330 Engineering Design &amp; Appropriate Technology</span>	
CEE 580 Hydrology and Seepage	CEE 312 Geotechnical Engineering CEE 313 Hydraulics	<span style="background-color: yellow;">EGR 498 – Honors Thesis</span>	
		<span style="background-color: yellow;">ENM 505 Management of Engr Systems I</span>	

Civil Electives	Prerequisites Required for Civil Elective	Technical Electives	Prerequisites for Technical Elective
CEE 582 Advanced Hydraulics	CEE 313 Hydraulics CEE 333 Water Resources Engineering	ENM 506 Management of Engr Systems II	
		ENM 517 Legal Aspects - Engineering	
CEE 584 Open Channel Flow	CEE 312 Geotech Engineering CEE 313 Hydraulics	ENM 521 Operations Research I	3 semesters of calculus
CEE 595	Instructors Approval Required	ENM 522 Operations Research II	MSC 500
		ENM 523 Optimization I	
		ENM 530 Cost & Economic Analysis for Engrs	
		ENM 572 System Simulation	MSC 501 & ENM or MSC 522 or equiv
		FIN 301 Business Finance	ECO 203, ACC 207 or ACC 301
		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 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 302 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
		MEE 473 Renewable Energy Systems	
		SEE 401 Research in Enviro Sustainability	
		SEE 402 Sustainability Research II	