

CE Engineering Topics Electives

2014-15 Catalog

Students must take eight credits of engineering topics and three credits of design electives. Of this total of eleven credits, six must be CCEE courses. *The student is responsible for making sure the appropriate prerequisites have been met for any course (s) attempted. Please see the catalog for details.*

Students with a particular interest in a technical specialty area are encouraged to confer with a professor in that area about taking a 500-level (graduate) course to expand their technical horizon and better prepare them to enter the practice of Civil Engineering.

Course	CR.	Title
A B E 363	4	Agri-Industrial Applications of Electric Power & Electronics
A B E 388 (C E/E E/M E/MAT E)	3	Sustainable Engineering & International Development
A B E 408 (EN SCI)	3	GIS and Natural Resources Management
A B E 466 (AER E/CPR E/E E/ ENGR/I E/MAT E/M E)	3	Multidisciplinary Engineering Design
A B E 478	3	Wood Frame Structural Design
ACCT 215	3	Legal Environment of Business
ACCT 284* or ↓	3	Financial Accounting
ACCT 285* (<i>*Only one counts toward graduation</i>)	3	Managerial Accounting
AER E 261	4	Introduction to Performance and Design
AER E 355	3	Aircraft Flight Dynamics and Control
AER E 417 (E M)	3	Experimental Mechanics
AER E 466 (A E/CPR E/E E/ENGR/I E/MAT E/M E)	3	Multidisciplinary Engineering Design
AGRON 402 (EN SCI/ GEOL/MTEOR/NREM)	4	Watershed Hydrology
AGRON 404 (EN SCI/ENV S/MTEOR)	3	Global Change
AGRON 485 (ENSI/MICRO)	3	Soil and Environmental Microbiology
ASTRO 342* or ↓	3	Introduction to Solar System Astronomy
ASTRO 346* (<i>*Only one counts toward graduation</i>)	3	Introduction to Astrophysics
ASTRO 405	3	Astrophysical Processes
BIOL 173^ (ENV S) or ↓	3	Environmental Biology
BIOL 211^ & BIOL 211L (<i>^General option only</i>)	3 & 1	Principles of Biology I and Lab (optional)
BIOL 381 (EN SCI/ENV S/MICRO)	3-4	Environmental Systems I: Introduction to Environmental Systems
C E 388 (A E/E E/M E/ MAT E)	3	Sustainable Engineering & International Development
C E 417	3	Land Surveying
C E 420 (General Option Only)	3	Environmental Engineering Chemistry
C E 421 (General Option Only)	3	Environmental Biotechnology
C E 428 (General Option Only)	3	Water and Wastewater Treatment Plant Design
C E 446	3	Bridge Design
C E 448	3	Building Design
C E 451	3	Urban Transportation Planning Models
C E 460	3	Foundations
C E 473	3	Groundwater Hydrology
C E 490	1-3	<i>Independent Study -- with a contract between the student and instructor at registration</i>
C E 500 - level courses	var.	(except CE 590, 591, 595 & 599)
CH E 210	3	Material and Energy Balances
CH E 406	3	Environmental Chemodynamics
CHEM 211 & 211L	2 & 2	Quantitative & Environmental Analysis and Lab
CHEM 231 & 231L (General Option Only)	3 & 1	Elementary Organic Chemistry and Lab
COM S 481 (MATH)	3	Numerical Solution to Diff. Equations and Interpolation
CON E 380	3	Engineering Law

CPR E 281	4	Digital Logic
CPR E 381	4	Computer Organization & Assembly Level Programming
CPR E 466 (AER E/A E/E E/ENGR/I E/MAT E/M E)	3	Multidisciplinary Engineering Design
CRP 293 (DSN S/ENV S)	3	Environmental Planning
CRP 376 (ECON)	3	Rural, Urban and Regional Economics
CRP 451	3	Introduction to Geographic Information Systems
CRP 484 (DSN S/ENV S)	3	Sustainable Communities
CRP 491 (DSN S/ENV S)	3	Environmental Law and Planning
DSN S 293 (CRP/ENV S)	3	Environmental Planning
DSN S 484 (CRP/ENV S)	3	Sustainable Communities
DSN S 491 (CRP/ENV S/L A)	3	Environmental Law and Planning
E E 201	4	Electric Circuits
E E 224	4	Signals and Systems I
E E 230	4	Electronic Circuits and Systems
E E 388 (A E/C E/MAT E)	3	Sustainable Engineering and International Development
E E 442	2	Introduction to Circuits and Instruments
E E 448	2	Introduction to AC Circuits and Motors
E E 466 (A E/AER E/CPR E/ENGR/I E/M E/MAT E)	3	Multidisciplinary Engineering Design
E M 350	3	Introduction to Nondestructive Evaluation Engineering
E M 362 & E M 362L (MAT E)	3 & 1	Principles of Non-Destructive Testing & Lab (optional)
E M 417 (AER E)	3	Experimental Mechanics
E M 424	3	Intermediate Mechanics of Materials
E M 425	3	Introduction to the Finite Element Method
E M 451 (M E)	3	Engineering Acoustics
E M 500 - level courses	var.	(except EM 590)
ECON 371	4	Introductory Econometrics
ECON 376 (CRP)	3	Rural, Urban and Regional Economics
ECON 380 (ENV S)	3	Environmental and Resource Economics
ECON 385	3	Economic Development
EN SCI 381(BIOL/ENV S/MICRO)	3-4	Environmental Systems I: Introduction to Environmental Systems
EN SCI 402 (AGRON/ GEOL/MTEOR/NREM)	4	Watershed Hydrology
EN SCI 402I (AGRON/IA LL)	4	Watershed Hydrology and Surficial Processes
EN SCI 404 (AGRON/ENV S/MTEOR)	3	Global Change
EN SCI 408 (A E)	3	GIS and Natural Resources Management
EN SCI 411 (GEOL)	4	Hydrogeology
EN SCI 414 (GEOL)	3	Applied Groundwater Flow Modeling
EN SCI 419 (GEOL)	3	Environmental Geochemistry
EN SCI 479 (GEOL)	3	Surficial Processes
ENGR 466 (A E/AER E/CPR E/E E/I E/M E/MAT E)	3	Multidisciplinary Engineering Design
ENV S 293 (CRP/DSN S)	3	Environmental Planning
ENV S 324 (GEOL/MTEOR)	3	Energy and the Environment
ENV S 380 (ECON)	3	Environmental and Resource Economics
ENV S 381 (BIOL/EN SCI/MICRO)	3-4	Environmental Systems I: Introduction to Environmental Systems
ENV S 404 (AGRON/EN SCI/MTEOR)	3	Global Change
ENV S 484 (CRP/DSN S)	3	Sustainable Communities
ENV S 491 (CRP/DSN S)	3	Environmental Law and Planning
GEOL 324 (ENV S/MTEOR)	3	Energy and the Environment
GEOL 356	5	Structural Geology
GEOL 365	3	Igneous and Metamorphic Petrology
GEOL 402 (AGRON/EN SCI/MTEOR/NREM)	4	Watershed Hydrology
GEOL 411 (EN SCI)	4	Hydrogeology

GEOL 414 (EN SCI)	3	Applied Groundwater Flow Modeling
GEOL 419 (EN SCI)	3	Environmental Geochemistry
GEOL 479 (EN SCI)	3	Surficial Processes
I E 312	3	Optimization
I E 341	3	Production Systems
I E 361 (STAT)	3	Statistical Quality Assurance
I E 408 (TSM)	3	Interdisciplinary Problem Solving
I E 409 (TSM)	3	Interdisciplinary Systems Effectiveness
I E 413	4	Stochastic Modeling, Analysis and Simulation
I E 466 (A E/AER E/CPR E/E E/ENGR/MAT E/M E)	3	Multidisciplinary Engineering Design
M E 231	3	Engineering Thermodynamics I
M E 332	3	Engineering Thermodynamics II
M E 436	4	Heat Transfer
M E 441	3	Fundamentals of Heating, Ventilating, & Air Conditioning
M E 451 (E M)	3	Engineering Acoustics
M E 466 (A E/AER E/CPR E/I E/E E/ENGR/MAT E)	3	Multidisciplinary Engineering Design
MAT E 362 & 362L (E M)	3 & 1	Principles of Nondestructive Testing & Lab (optional)
MAT E 273	2	Principles of Materials Science & Engineering
MAT E 466 (A E/AER E/CPR E/I E/E E/ENGR/I E/M E)	3	Multidisciplinary Engineering Design
Math 304	3	Introductory Combinatorics
Math 317 (<i>also a Numeric Analysis elective</i>)	4	Theory of Linear Algebra
Math 365	3	Complex Variables with Applications
Math 373 (<i>also a Numeric Analysis elective</i>)	3	Introduction to Scientific Computation
Math 385	3	Introduction to Partial Differential Equations
Math 481 (COM S)	3	Numerical Solution to Diff. Equations and Interpolation
MICRO 201L	1	Introductory Microbiology Laboratory
MICRO 381 (BIOL/EN SCI/ENV S)	3-4	Environmental Systems I: Introduction to Environmental Systems
MICRO201	2	Introduction to Microbiology
MTEOR 206 (AGRON)	3	Introduction to Meteorology
MTEOR 301* (<i>or MTEOR 341</i>)	4	General Meteorology
MTEOR 324 (ENV S/GEOL)	3	Energy and the Environment
MTEOR 341* (<i>*Only one counts toward graduation</i>)	3	Atmospheric Physics I
MTEOR 402 (ARON/EN SCI/GEOL/NERM)		Watershed Hydrology
MTEOR 404 (AGRON/EN SCI/ENV S)	3	Global Change
NREM 402 (AGRON/EN SCI/GEOL/MTEOR)	4	Watershed Hydrology
NUC E 401	3	Nuclear Radiation Theory and Engineering
PHYS 321	3	Introduction to Modern Physics I
PHYS 321L	1	Introductory Laboratory in Modern Physics I
PHYS 322	3	Introduction to Modern Physics II
PHYS 322L	1	Introductory Laboratory in Modern Physics II
PHYS 361	3	Classical Mechanics
PHYS 362	3	Intermediate Mechanics
SCM 301	3	Supply Chain Management
SCM 460	3	Decision Tools for Logistics & Operations Management
SCM 461	3	Principles of Transportation
SCM 462	3	Transportation Carrier Management
SCM 466	3	International Transportation and Logistics
STAT 361 (I E)	3	Statistical Quality Assurance
STAT xxx	var.	Any statistics course above or including Stat 401 except STAT 490