



UNIVERSITY OF WASHINGTON

OFFICE OF THE PRESIDENT

December 12, 2006

Mark A. Emmert, President

Dean Matthew O'Donnell
College of Engineering
Box 352180

Dear Matthew:

Based on the recommendation of its Subcommittee on Admissions and Programs, the Faculty Council on Academic Standards has recommended approval of the revised requirements for a Bachelor of Science degree in Civil Engineering. A copy of the changes is attached.

I am writing to inform you that the College of Engineering is authorized to specify these requirements beginning winter quarter 2007.

The new requirements should be incorporated in printed statements and in individual department websites as soon as possible. The *General Catalog* website will be updated accordingly by the Registrar's Office.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Mark".

Mark A. Emmert
President

Enclosure

cc: Mariko Navin (with enclosure)
Mr. Robert Corbett (with enclosure)
Dr. Deborah H. Wiegand (with enclosure)
Todd Mildon, J.D. (with enclosure CEE-20061116)



UNIVERSITY OF WASHINGTON
**CREATING AND CHANGING UNDERGRADUATE
 ACADEMIC PROGRAMS**

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CEE - 2006 11.16

After college/school review, send a signed original and 8 copies to FCAS, Box 351271.

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College College of Engineering	Department or Unit Civil & Environmental Engineering	Date 11/16/06
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New Programs

- Leading to a Bachelor of _____ in _____ degree.
- Leading to a Bachelor of _____ degree with a major in _____.
- Leading to a _____ Option within the existing major in _____.
- Leading to a minor in _____.

Changes to Existing Programs

- New Admission Requirements for the Major in _____ within the Bachelor of _____.
- Revised Admission Requirements for the Major in _____ within the Bachelor of _____.
- Revised Program Requirements for the Major in _____ within the Bachelor of Science in Civil Engineering.
- Revised Requirements for the Option in _____ within the major in _____.
- Revised Requirements for the Minor in _____.

Other Changes

- Change name of program from _____ to _____.
- New or Revised Continuation Policy for _____.
- Eliminate program in _____.

Proposed Effective Date:

Quarter: Autumn Winter Spring Summer **Year: 20_07**

Contact Person Mariko Navin	Contact's Phone 206 — 543 — 5092	Contact's Email mnavin@u.washington.edu
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EXPLANATION OF AND RATIONALE FOR PROPOSED CHANGE

For new programs, please include any relevant supporting documentation such as student learning outcomes, projected enrollments, letters of support and departmental handouts. (Use additional pages if necessary).

- 1) ABET requires students to have proficiency in at least four areas of Civil Engineering. We cover six areas of Civil Engineering, and in a previous Program Change (05-26-05), we identified "Core Courses" in each of these areas and required students to take at least one course from four (of the six) different areas. We are proposing to modify our graduation requirements by requiring students to achieve a grade of at least 2.0 in each of the four courses used to fulfill the Core Courses requirement.
- 2) The required two course design sequence (CEE 440 and choice of CEE 441, 442, 443, 444, or 445) is also important to our accreditation requirements, and we are proposing to require a minimum grade of 2.0 for both courses in this two course sequence.

Note -- A recent departmental study showed that these changes would have had virtually no (or negligible) impact on our recent graduates. We feel that this proactive approach is an appropriate part of our preparation for our 2007 accreditation visit.

CATALOG COPY

Catalogue Copy as currently written. Include only sections/paragraphs that would be changed if you request is approved. Please cross out or otherwise highlight any deletions.

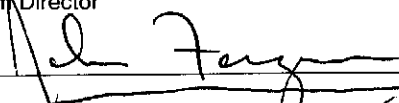
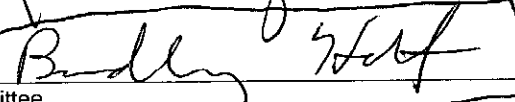
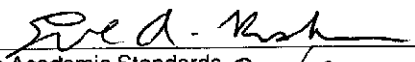
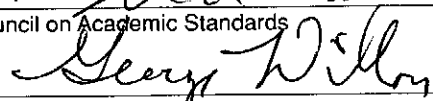
- 2. Major Requirements (94 credits)
- c. Comprehensive Design (6 credits): CEE 440 and one course from CEE 441, CEE 442, CEE 443, CEE 444, or CEE 445
- d. Civil Engineering Technical Electives (15 credits): A minimum of 12 credits of CEE 400-level coursework selected from an approved list, with at least one core course from four separate areas of concentration within Civil Engineering. Plus any additional CEE 400-level course (except CEE 423 and courses taken to fulfill requirement c, above).

PROPOSED CATALOG COPY

Reflecting requested changes (Include exact wording as you wish it to be shown in the printed catalog. Please underline or otherwise highlight any additions. If needed, attach a separate, expanded version of the changes that might appear in department publications)

- 2. Major Requirements (94 credits)
- c. Comprehensive Design (6 credits): CEE 440 and one course from CEE 441, CEE 442, CEE 443, CEE 444, or CEE 445. Minimum grade of 2.0 required for both courses in this two-course sequence.
- d. Civil Engineering Technical Electives (15 credits): A minimum of 12 credits of CEE 400-level coursework selected from an approved list, with at least one core course from four separate areas of concentration within Civil Engineering. Plus any additional CEE 400-level course (except CEE 423 and courses taken to fulfill requirement c, above). Minimum grade of 2.0 required for each of the four courses used to fulfill the Core Courses requirement.

SIGNATURES (required)

Chair/Program Director		Date	11/16/2006
College Committee		Date	11/20/2006
DEAN: 		Date	11/21/06
Faculty Council on Academic Standards		Date	12/08/06

UoW 1503 (12/05) REVERSE



Civil and Environmental Engineering Curriculum

Lower Division Courses

Mathematics	24
MATH 124 Calc/Analytic Geom I	5
MATH 125 Calc/Analytic Geom II	5
MATH 126 Calc/Analytic Geom III	5
MATH 307 Differential Equations	3
MATH 308 or 318 Linear Algebra	3
IND E 315*	3
or STAT 390,	
or 300-level or higher math	
(MATH 309, Math 324 or others	
with permission)	
Physics	15
Phys 121 Mechanics	5
Phys 122 Elect-Mag & Osc	5
Phys 123 Waves	5
Chemistry	10
Chem 142 General Chemistry	5
Chem 152 General Chemistry	5
Engineering Fundamentals	19
CSE 142 Computer Programming I	4
AA 210 Statics	4
CEE 220 Mechanics of Materials	4
ME 230 Kinematics & Dynamics	4
IND E 315*	3
or choice of ME 123, MSE 170, EE215	
IND E 250, CHEM E 260, IND E 280	
Written and Oral Communication	(12) 8
ENGL 131 English Composition	5
TC 231 Intro to Technical Writing	3
CEE 363 (W)	(4)
I&S	10
ECON 200 or IND E 250 [◇]	—
<i>I&S Elective</i>	—
<i>I&S Elective</i>	—
VLPA	10
<i>VLPA Elective</i>	—
<i>VLPA Elective</i>	—
<i>VLPA Elective</i>	—
Additional VLPA or I&S	4

Upper Division Courses

Required Junior Year	45
CEE 306 Construction Engr I	3
CEE 316 Surveying	4
CEE 320 Transportation Engr	3
CEE 342 Fluid Mechanics	4
CEE 345 Hydraulic Engr	4
CEE 350 Environmental Engr I	4
CEE 363 Construction Materials	4
CEE 366 Basic Soil Mechanics	4
CEE 379 Elem. Structures I	4
CEE 380 Elem Structures II	4
CEE 390 CE Systems	3
CEE 391 Autocad	3
CEE 392 MatLab	1
Professional Practice and Capstone	6
CEE 440 Professional Practice	2
Capstone Design Course	4
Choice of CEE 441, 442, 443,	
444 or 445	
Technical Electives	15
(Core Courses from List A)	
Core Course (first area)	—
Core Course (second area)	—
Core Course (third area)	—
Core Course (fourth area)	—
Additional Technical Elective	—
Upper Division Engineering and Science	9
(List B)	
Upper Division Course	—
Upper Division Course	—
Upper Division Course	—
Free Elective (can be lower-division)	5

* IND E 315 can be counted as either a Math class or an Engineering Fundamentals (but not both).

◇ IND E 250 cannot be counted as part of the 10 I&S credits, but does count as an Engineering Fundamentals and also fulfills the Economics requirement.

List A
 Civil Engineering Core Technical Electives by Area of Concentration
 (must choose at least one course from at least four different areas)

Civil Engineering Areas of Concentration	Core Courses
Construction Engineering	CEE 404 - Infrastructure Construction CEE 421 - Pavement Design CEE 425 - Reinforced Concrete Construction
Environmental Engineering	CEE 481 - Hydraulic Design for Environmental Engineering CEE 482 - Wastewater Treatment and Reuse CEE 483 - Drinking Water Treatment CEE 490 - Air-Pollution Control
Geotechnical Engineering	CEE 436 - Foundation Design
Structural Engineering and Mechanics	CEE 451 - Design of Metal Structures CEE 452 - Design of Reinforced Concrete Structures CEE 453 - Prestressed Concrete Design CEE 454 - Design of Timber Structures CEE 455 - Structural Unit Masonry CEE 457 - Advanced Structures I
Transportation Engineering	CEE 410 - Traffic Engineering Fundamentals CEE 412 - Transportation Data Management CEE 416 - Urban Transportation Planning and Design
Hydrology, Water Resources and Environmental Fluid Mechanics	CEE 474 - Hydraulics of Sediment Transport CEE 476 - Physical Hydrology CEE 477 - Open-Channel Engineering

**Civil & Environmental Engineering
Upper Division Engineering and Science Electives**

4-Apr-03

COURSE	TITLE	CREDITS
	Counts: all 300- and 400-level engineering courses from ME, CHEM E, A A, E E, CSE, IND E, and MSE.	
	Counts: all CEE 400-level courses, except CEE 423 (I & S)	
	EXCEPTIONS--THESE WILL NOT COUNT: CHEM E 309 (VLPA), T C 231, 333 (Written & Oral Communication), ENGR 301, 310, 321, 322, 468, IND E 315, any math	
ARCH 310	ARCHITECTURAL DESIGN DRAWING I	3
ARCH 331	ENVIRONMENTAL CONTROL SYSTEMS	3
ARCH 431	ENVIRONMENTAL CONTROL PRINCIPLES	3
ARCH 433	ACTIVE CONTROL SYSTEMS FOR BLDG OPERATION	3
ARCH 436	BUILDING ACOUSTICS	3
ARCH 437	PASSIVE THERMAL CONTROLS	3
ARCH 574	DESIGN AND CONST LAW	3
ASTR 301	ASTR FOR SCIENTISTS & ENGR	3
ASTR 322	CONTESTS OF OUR GALAXY	3
ATM S 301	INTRO ATMOSPHERIC SCIENCES	5
ATM S 321	PHYSICAL CLIMATOLOGY	3
ATM S 340	INTRO THERMODYNAMICS & CLOUD PROCESSES	5
ATM S 358	FUND ATMOS CHEMISTRY	3
ATM S 370	ATMOSPHERIC STRUCTURE & ANALYSIS	5
BIOL 180	INTRO BIOLOGY	5
BIOL 200	INTRO BIOLOGY	5
BIOL 220	INTRO BIOLOGY	5
BIOL 340	GENETICS & MOLECULAR ECOLOGY	5
BIOL 438	BIOLOGICAL MONITOR & ASSESSMENT	5
BIOL 472	PRINCIPLES OF ECOLOGY	5
BIOL 473	LIMNOLOGY	3
BIOL 475	LIMNOLOGY LAB	2
BIOL 476	CONSERVATION BIOLOGY	5
BOTANY 354	INTRO TO PLANT ECOLOGY	5
BOTONY 428	MOLECULAR & CELLULAR BIOL OF PLANTS	3
CHEM 162	GENERAL CHEMISTRY	6
CHEM 223	ORGANIC CHEM, SHORT PROGRAM	4
CHEM 224	ORGANIC CHEM, SHORT PROGRAM	4
CHEM 237	ORGANIC CHEMISTRY	4
CHEM 238	ORGANIC CHEMISTRY	4
CHEM 239	ORGANIC CHEMISTRY	3
CHEM E 260	THERMODYNAMICS	4
CM 310	INTRO TO CONSTRUCTION INDUSTRY	3
CM 312	CONSTRUCTION ACCOUNTING	3
CM 320	CONSTRUCTION CONTRACT DOCUMENTS	3
CM 331	CONSTRUCTION ESTIMATING I	4
CM 332	CONSTRUCTION EQUIP MANAGEMENT	3
CM 410	CONSTRUCTION ESTIMATING II	4

Civil & Environmental Engineering
Upper Division Engineering and Science Electives

4-Apr-03

COURSE	TITLE	CREDITS
CM 411	PROJECT PLANNING & CONTROL	3
CM 420	TEMPORARY STRUCTURES	3
CM 421	PROJECT MANAGEMENT I	3
CM 422	COMPUTER APPLICATIONS IN CONSTRUCTION	3
CM 454	INTRO TO REAL ESTATE FINANCE	4
CSE 143	COMPUTER PROGRAMMING II	5
EHUF 477	WETLAND RESTORATION	5
ENV H 405	TOXIC CHEM AND HUMAN HLTH	3
ENV H 445	SOLID WASTE MGMT	3
ENV H 446	HAZARDOUS WASTE MGMT	3
ENV H 490	COMMUNITY AIR POLLUTION	3
ESRM 210	INTRODUCTORY SOILS	4
ESRM 311	SOILS AND LAND USE	3
ESRM 320	OLD GROWTH & FOREST MGMT	5
ESRM 322	FOREST ECOSYSTEMS	3
ESRM 401	SPRING COMES TO THE CASCADES	3
ESRM 418	COMPOST & ORGANIC SOIL AMENDMENTS	5
ESRM 441	LANDSCAPE ECOLOGY	5
ESS 210	PHYSICAL GEOLOGY	5
ESS 211	PHYSICAL PROCESSES OF THE EARTH	5
ESS 212	EARTH MATERIALS & PROCESSES	5
ESS 213	EVOLUTION OF THE EARTH	5
ESS 301	GEOLOGY OF THE NW	5
ESS 302	GREAT ICE AGE	5
ESS 303	GEOLOGIC HAZARDS	5
ESS 304	VOLCANOES & CLACIERS OF THE PACIFIC NW	5
ESS 305	EARTHSCAPES	5
ESS 306	PLANETARY GEOLOGY	5
ESS 311	GEOMECHANICS	5
ESS 312	GEOCHEMISTRY	5
ESS 313	GEOBIOLOGY	5
ESS 315	ENVIR EARTH SCIENCE	5
ESS 326	GEOMORPHOLOGY	5
ESS 345	THE ENVIR OF FUEL & MINERAL DEPOSITS	3
ESS 401	REGIONAL GEOLOGY OF THE PACIFIC NW	5
ESS 403	GLOBAL GEOPHYSICS AND PLATE TECTONICS	5
ESS 411	GEOPHYS CONTINUUM MECHANICS	3
ESS 412	SEISMOLOGY	3
ESS 413	GEOPHYSICS: THE EARTH	3
ESS 414	GEOPHYSICS: FLUIDS	3
ESS 415	SPACE AND PLASMAS	3
ESS 416	GEOPHYSICS: THE ATMOSPHERE	3
ESS 421	INTRO TO GEOLOGICAL REMOTE SENSING	4

**Civil & Environmental Engineering
Upper Division Engineering and Science Electives**

4-Apr-03

COURSE	TITLE	CREDITS
ESS 422	INTERMEDIATE SPECTRAL REMOTE SENSING	4
ESS 424	WATER IN THE ENVIR	3
ESS 426	FLUVIAL GEOMORPHOLOGY	5
ESS 427	HILLSLOPE GEOMORPHOLOGY	5
ESS 428	LANDSCAPE EVOLUTION	5
ESS 431	PRINCIPLES OF GLACIOLOGY	3
ESS 432	GLACIAL GEOLOGY	3
ESS 433	ENVIR CHANGE IN THE GLACIAL AGES	3
ESS 439	PETROLOGY OF IGNEOUS ROCKS	5
ESS 440	PETROGRAPHY & PETROLOGY OF METAMORPHIC ROCKS	5
ESS 441	PETROLOGY & PETROGRAPHY OF SEDIMENTARY ROCKS	5
ESS 445	GEOLOGY OF ORE DEPOSITS	5
ESS 452	FOSSIL VERTEBRATES	5
ESS 455	STRATIGRAPHY	4
ESS 456	DEPOSITIONAL ENVIRONMENTS	4
ESS 458	ISOTOPE AND TRACE ELEMENT IN GEOL: LITHOSPHERE	3
ESS 462	VOLCANIC PROCESSES	3
ESS 463	STRUCTURE & TECTONICS	5
ESS 464	GEODYNAMICS	4
ESS 466	APPLIED SEISMOLOGY	2
ESS 467	SEISMIC EXPLORATION	5
ESS 471	INTRO TO SPACE PHYSICS	3
FE 423	WATERSHED ANALYSIS	4
FE 425	WILDLAND HYDROLOGY	4
FE 430	AERIAL PHOTOS/REMOTE SENSING	3
FE 445	MGMT SCIENCE IN FOREST ENGINEERING	5
FE 451	GIS-BASED LANDSCAPE MODELING	5
FE 452	STREAM-ROAD SYSTEM INTERACTIONS	5
FE 465	INTRO TO PHOTOGRAMMETRY	2
FE 470	WOOD SCIENCE & FOREST PRODUCTS MFG	3
FE 480	SILVICULTURAL ENG SYSTEMS	3
FISH 312	FISHERIES ECOLOGY	5-Mar
FISH 323	CONSERVATION & MGMT OF AQUATIC RESOURCES	5
FISH 324	BIOL & CULTURE OF AQUATIC ORGMS	5
FISH 428	RESTORATION OF FISH COMM & HABITAT IN RIVER ECOSYS	5
FISH 430	BIOL PROLBEMS IN WATER POL	5-Mar
FISH 447	WATERSHED ECOL & MANAGEMENT	3
FM 328	FORESTRY-FISHERIES INT' ACTIONS	4
GEOG 230	URBANIZATION & DEVELOP: GEOG OF GLOBAL INEQUALITY	5
GEOG 277	GEOGRAPHY OF CITIES	5
GEOG 360	PRINCIPLES OF CARTOGRAPHY	5
GEOG 370	PROB RESOURCE MGMT	5
GEOG 435	INDUSTRIALIZATION & URBANIZATION IN CHINA	5

**Civil & Environmental Engineering
Upper Division Engineering and Science Electives**

4-Apr-03

COURSE	TITLE	CREDITS
GEOG 460	GEOGRAPHIC INFO SYSTEMS	5
GEOG 461	URBAN GEOGRAPHIC INFO SYS	5
GEOG 471	METHODS OF RESOURCE ANALYSIS	5
L ARCH 331	LANDSCAPE CONSTRUCTION	4
L ARCH 341	SITE PLANNING	3
L ARCH 433	LARGE-SCALE SITE CONSTRUCTION	4
ME 295	PRODUCT DISSECTION	3
MICROM 301	GEN MICROBIOLOGY	3
MICROM 302	GEN MICROBIOLOGY, LAB	2
OCEAN 400	CHEMICAL OCEANOGRAPHY	4
OCEAN 410	MARINE GEOLOGY & GEOPHYSICS	4
OCEAN 420	PHYSICAL PROCESSES IN THE OCEAN	3
OCEAN 421	CHEMICAL OCEANOGRAPHY	4
OCEAN 450	CLIMATIC EXT	4
PHYS 224	THERMAL PHYSICS	3
PHYS 225	MODERN PHYSICS	3
PHYS 227	ELEMENTARY MATHEMATICAL PHYSICS	3
PHYS 228	ELEMENTARY MATHEMATICAL PHYSICS	3
PSE 476	PULPING & BLEACHING PROCESSES	3
URBDP 429	COMPUTER-AIDED PLANNING OF URBAN SYSTEMS	3
URBDP 457	HOUSE DEV COUNTRIES	3
URBDP 465	LAND USE	3
URBDP 466	INFRASTRUC & COMM FACILITIES	4
URBDP 479	THE URBAN FORM	3

Number of students with less than 2.0 grade for CEE senior-level courses (out of total class enrollment) for 2005-06 year.

Course	Title	Cr	CEE Progam Reqmt	AU05	WI06	SP06
404	Infrastructure Constr	4	Construction Core			0/38
405	Constr Planning & Scheduling	3				
406	Constr Engineering	3				
407	Contracts & Specifications	3				
410	Traffic Engr Fundamentals	3	Transportation Core		0/44	
412	Trans Data Mgmt	3	Transportation Core	0/24		
416	Urb Trans Plannning Design	3	Transportation Core	0/23		
418	Computer-Aided Planning of Urban	3				
421	Pavement Design	3	Construction Core	1/49		
422	Construction Materials II	4				
423	Heritage of Civil Engr	3 or 4				0/1
424	GIS for Civil Engrs	3		0/50		
425	Reinforced Concrete Constr	3	Construction Core			0/19
428	Lightweight Cementitious Compos	2			2/48	
431	Seismology & Earthquake Engr	3				
436	Foundation Design	3	Geotechnical Core		0/15	1/15
437	Engineering Geology	3		1/17		
440	Prof'l Practice Studio	2	Prof Practice	0/109		
441	Transp & Constr Capstone	4	Capstone		0/61	
442	Structural Geotech Design Project	4	Capstone			0/37
443	Design of Subsurface Remediation	4	Capstone			
444	Water Res & Hydr Engr Design	4	Capstone		0/16	
445	Envir Engr Design Project	4	Capstone			0/9
451	Design of Metal Structures	3	Structural core		2/54	
452	Design Reinf Concrete Structures	3	Structural core	0/61		
453	Prestressed Concrete Design	3	Structural core		1/32	
454	Design Timber Structures	3	Structural core	0/34		
455	Struc Unit Masonry	3	Structural core			0/18
457	Advanced Struc I	3	Structural core	1/43		
458	Advanced Structures II	3			0/23	
459	Adv Structural Mechanics	3				
461	Biol Problems in Water Pollutions	3 or 5				
462	Applied Limnology & Pollutant Effe	3 or 5		1/25		
464	Subsurface Contaminant Transpo	3				
472	Intro to Hydraulics in Water Resou	3				
473	Coastal Engineering I	3				
474	Hydraulics of Sediment Transp	3	Water Core	0/19		
475	Analysis Techniques for Groundwa	3		4/27		
476	Physical Hydrology	3	Water Core	6/37		
477	Open-Channel Engr	3	Water Core			2/22
480	Air-Quality Modeling	3			0/6	
481	Hydraulic Design for Env'l Engr	3	Environmental Core		0/29	
482	Wastewater Treatmt & Reuse	3	Environmental Core	0/15		
483	Drinking Water Treatmnt	3	Environmental Core		0/12	
484	On-Site Wastewater Disposal	3				
485	Env Engineering Chemistry	3		0/9		
486	Envir Analysis Lab	3				0/5
487	Solid-Waste Disposal	3				
488	Hazardous Wastes Engr	3				
489	Water and Air Quality Sampling	2				

Number of students with less than 2.0 grade for CEE senior-level courses (out of total class enrollment) for 2005-06 year.

Course	Title	Cr	CEE Program Reqmt	AU05	WI06	SP06
490	Air-Pollution Control	4	Environmental Core			
491	Deterministic Systems	3				
492	Stochastic Systems	3				
493	Air Pollution Source Testing & Equ	3			0/5	
494	Air Pollution Control Equip Design	3			0/1	
495	Sustainability & Design for Environ	3			1/19	
498	Special Topic: A	2		0/38		1/12
498	Special Topic: B	3		5/74		
498	Special Topic: C	3		0/7		
499	Special Projects	1-5, max 5		1/16	0/16	0/20