



UNIVERSITY OF WASHINGTON

OFFICE OF THE PRESIDENT

September 27, 2005

Mark A. Emmert, President

Dean Mani Soma
College of Engineering
Box 352180

Dear Mani:

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 Civil Engineering Department is authorized to specify these requirements beginning autumn quarter 2005.

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: Professor G. Scott Rutherford (with enclosure)
Enrollment Services c/o Diane Hanks (with enclosure)
Mr. Robert Corbett (with enclosure)
Dr. Deborah H. Wiegand (with enclosure) CEE-052605



CE-052605

Creating & Changing Undergraduate Academic Programs*

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

College: Engineering Department or Unit: Civil Engineering Date: May 26, 2005

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/year) Autumn/2005

Contact Person	Phone Number	Email
Don Janssen	543-9655	dnjan@msn.com

1. Explanation of and Rationale for Proposed Change: (Please use additional pages if necessary. For new programs, please include any relevant supporting documentation such as student learning outcomes, projected enrollments, letters of support, and departmental handouts.)

1) ABET (our accreditation board) requires students to have proficiency in various areas of mathematics, including statistics. We have not required a statistics course and a recent discussion with students in the department indicated that many of them did not feel like they had any proficiency in the area of statistics. We therefore have decided to require either IND E 315 or STAT 390. While IND E 315 would be the preferred course, requiring only this course would place a burden on both transfer students and the Industrial Engineering program (which teaches IND E 315). Therefore, we decided to allow either course.

To provide some added flexibility for our students, they will be permitted to count IND E 315 as either a Mathematics course or an Engineering Fundamentals course. Credit will not be granted for both IND E 315 and STAT 390.

2) We have reduced the required Engineering Fundamentals credits from 20 to 19. While most Engineering Fundamentals courses are 4 credits, IND E 315 is only 3. This change allows students who are counting IND E 315 as an Engineering Fundamentals not to need an additional Engineering Fundamentals course to get that last credit.

3) CEE 391 was originally proposed as a single, 4-credit course. It has proven more effective to break the content down into two separate courses, CEE 391 (3-credits) and CEE 392 (1 credit)

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4) ABET requires students to have proficiency in at least four areas of Civil Engineering. We cover six areas of Civil Engineering, and have identified "Core Courses" in each of these areas (see attached List A). We are proposing to modify our minimum 15-credit Technical Electives (senior-level, in-department) requirement to include at least one core course in each of four separate areas of Civil Engineering. Students may choose any Core Courses so long as they come from at least four different areas identified in List A.

** For information about when and how to use this form please go to <http://www.washington.edu/faculty/facsenate/councils/fcas/1503/>.*

Creating & Changing Undergraduate Academic Programs

2. Catalog Copy

A. Catalog Copy as Currently Written *(Include only sections/paragraphs that would be changed if your request is approved. Please cross out or otherwise highlight any deletions.)*

- **Learning Objectives and Expected Outcomes:**





Upon completion of the undergraduate program, students can demonstrate proficiency in applying fundamental mathematical, scientific, and engineering principles in formulating and solving civil engineering problems; demonstrate sufficient mastery of core civil engineering topics suitable for entry into the profession and for graduate study; gain significant experience in designing systems and components in civil and environmental applications in both individual and team contexts; possess up-to-date skills for analysis, data collection, modeling, project management, professional development, communication, and presentation; and develop an understanding of professional and social issues suitable for participation and leadership in their communities.

B. 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.)*

- **Learning Objectives and Expected Outcomes:**

Upon completion of the undergraduate program, students can demonstrate proficiency in applying fundamental mathematical, statistical, scientific, and engineering principles in formulating and solving civil engineering problems; demonstrate sufficient mastery of core civil engineering topics suitable for entry into the profession and for graduate study; gain significant experience in designing systems and components in civil and environmental applications in both individual and team contexts; possess up-to-date skills for analysis, data collection, modeling, project management, professional development, communication, and presentation; and develop an understanding of professional and social issues suitable for participation and leadership in their communities.

3. Signatures (required)

Chair/Program Director 	Date 5/31/05	Dean 	Date 6-1-05
College Committee 	Date 1 June 05	Faculty Council on Academic Standards 	Date SEPT 1, 2005

Graduation Requirements (*departmental application prerequisites are marked with asterisk*)

1. *Written and Oral Communications (8 credits)*: 5-credits in English composition*; T C 231.
2. *Visual, Literary, and Performing Arts (VLPA) and Individuals and Societies (I&S) (24 credits)*: A minimum of 10 credits in VLPA and a minimum of 10 credits of I&S plus 4 additional credits in either area.
3. *Economics (4-5 credits)*: ECON 200 or IND E 250. ECON 200 may also be applied towards the I&S requirement. IND E 250 may also be applied towards the requirement for an additional Engineering Fundamentals course.
4. *Natural World (49 credits)*
 - a. *Mathematics (21 credits)*: MATH 124*, MATH 125*, MATH 126*, MATH 307 (or AMATH 351), MATH 308* (or AMATH 352)
 - b. *Statistics (3-4 credits)*: IND E 315 (preferred) or STAT 390
 - c. *Science (25 credits)*: CHEM 142*, CHEM 152; PHYS 121*, PHYS 122*, PHYS 123
5. *Engineering Fundamentals (19 credits)*:
 - a. CSE 142*, A A 210*, CEE 220*, and M E 230*.
 - b. Students who complete STAT 390 must complete an additional Engineering Fundamentals course from CHEM E 260, IND E 250, IND E 280, M E 123, or MSE 170. Students who complete IND E 315 must complete either an additional Engineering Fundamentals course from the above list, or an additional 300-level math course other than statistics.
6. *Civil Engineering Core (45 credits)*: CEE 306, CEE 316, CEE 320, CEE 342, CEE 345, CEE 350, CEE 363, CEE 366, CEE 379, CEE 380, CEE 390, CEE 391, CEE 392
7. *Comprehensive Design (6 credits)*: CEE 440 and one course from CEE 441, CEE 442, CEE 443, CEE 444, or CEE 445
8. *Civil Engineering Technical Electives (15 credits)*: A minimum of 12 credits of CEE 400-level course work 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 #7, above).
9. *Upper Division Engineering and Science (9 credits)*: Choice of additional CEE 400-level courses or courses from an approved list of courses outside the department.
10. *Grade Requirements*: Minimum 2.00 GPA in all engineering courses with no grade below 1.0 in these courses. (For admission, minimum 2.0 in all prerequisite courses marked with asterisk, above, and average prerequisite GPA of 2.5)

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 421 - Pavement Design CEE 425 - Reinforced Concrete Construction CEE 498 - Infrastructure 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