

Revised Civil Engineering Curriculum

How does it affect you?

Chris Cox, Associate Department Head

November 12, 2008

November 17, 2008

Why a new curriculum?

- Changes in ABET accreditation criteria for Civil Engineering programs
 - Additional science class required
 - Change in the number of CE concentration areas in which a student must demonstrate proficiency
 - Need to include design of experiments
 - Need to demonstrate understanding of business, management and public policy concepts
- Desire to strengthen CADD instruction in curriculum
- To accommodate new 5-year BS/MS degree program
- Reduce required credit hours
- Allow students the flexibility in senior year to tailor their curriculum to greater depth or breadth in civil engineering.
- Tailor laboratory experiments to student interests
- Better prepare students for FE exam
- Better utilize faculty resources

Differences in new and old curricula

Deletions

- Math 251
- Physics 231
- Two required credit hours
- 321 lab

Additions

- CE 300 CADD
- Econ 201 required as Social Science Elective
- Additional science elective
- Additional credit hour of CE305
- FE402 Fundamentals of Engineering Review
- General CEE Lab
- Extra hour of 321 lecture
- Total of nine hours CEE/Technical Electives

Differences in new and old curricula (continued)

Change in concentration areas

Previously required two courses in five concentration areas:

Environmental (380 and 480)

Geotechnical (330 (lab) and 435)

Structures (361 and 471)

Transportation (351 and 352)

Water Resources (390 (lab) and 416)

New curriculum requires one course in each of the five concentration areas PLUS two sequences that include advanced course and lab in two different concentration areas:

Area	Basic Course (3)	Advanced Course (3)	Lab (1)
Environmental	381	481	482
Geotechnical	331	431	432
Structures	371	461	463
Transportation	355	455	456
Water Resources	391	494	496

Required

Choose two areas (advanced course and lab)

Still in Approval Process – Not Official

English 101 Chemistry 120 Math 141 EF 151 EF105	3 4 4 4 1 16	English 102 Chemistry 130 Math 142 EF 152	3 4 4 4 15
Math 231 Statistics 251 EF 202 CE 210 Econ 201	3 3 2 4 4 16	Math 241 CE205 Structural Mechanics 262 Water Resources I 391 Science Elective	4 2 3 3 3-4 15-16
Structures I 361 Geotech I 331 Environmental I 381 Transportation I 355 Gen Ed Elective General CEE Lab 310	3 3 3 3 3 1 16	CE Systems 440 Materials of Construction 321 AutoCad 300 GenEd Elective GenEd Elective CE305	3 3 3 3 3 2 17
Construction Management 442 Concentration Design Elective CE Lab Elective CE/Tech Elective CE/Tech Elective Gen Ed Elective	3 3 1 3 3 3 16	CE 400 CE 401/FE402 Concentration Design Elective CE Lab Elective CE/Tech Elective Gen Ed Elective	3 2 3 1 3 3 15
Total Hours: 126-127			

Additional changes that apply to 09-10 catalog:

- Only 4 credit hours of CEE courses in which a grade of C- or lower is earned can count toward graduation
- Dual five-year BS/MS program:
 - Can count up to 6 credit hours of CEE/Tech electives toward both degrees.
 - Students must have an overall GPA of 3.4 in required undergraduate coursework. Conditional admission to the 5-year program may be granted after completion of 65 hours of required course work, while full admission may be granted after the completion of 96 hours of required coursework with a minimum GPA of 3.4. Admission must be approved by the department, the College of Engineering, and the Graduate School.
 - Students must at least be conditionally admitted to the program prior to taking courses that receive credit for both the BS and MS degrees. All courses taken for graduate credit must be approved by the chair of the department and the Graduate School.

CEE/Technical Electives in New Curriculum – What should I take?

- If you are enrolled in the dual BS/MS program you should take graduate-level courses in your field of interest (structures, environmental, etc.)
- To get depth in an area of interest, consider undergraduate electives or graduate-level courses in that area. You can take graduate level courses if you have a cumulative GPA of 2.75 or higher or with consent of instructor.
- To get breadth in civil engineering, consider taking the level II courses in areas besides your two selected areas of concentration. For example, if your areas of concentration are Structures and Geotechnical, consider taking Water Resources II, Transportation II or Environmental II.
- Consider other supporting courses such as Accounting 200 or courses that support a technical minor (Environmental Engineering, Geography, Statistics).

Science Electives in New Curriculum – What should I take?

Biology 101, 102, 130, 140, 157
Civil Engineering 513
Environmental Soil Science 462
Geography 131, 410
Geology 101, 103, 107

Not chemistry or physics.
Other courses may be approved on a case by case basis.

How does the new curriculum effect you?

First, decide if you want to graduate under old or new curriculum. You can choose any catalog during the time in which you were enrolled. You must satisfy all requirements of the catalog that you select. To the extent possible, we will make accommodations for you to graduate on time under the catalog of your preference, provided that you take responsibility to successfully complete courses when they are offered.

- The new curriculum *may* be more advantageous to you if one or more of the following apply: 1) have not taken Math 251 or Physics 231 (although these could count as Tech electives); 2) have not taken CE 305; 3) have not completed your social science gen ed electives; 4) do not have more than one grade of C- or lower in CEE classes; 5) the planned offering of 400-level courses will not delay your graduation; 6) plan to attend graduate school at UTK

I suggest that you fill out a curriculum flow sheet for both curricula and see which works better for you. Discuss with your advisor.

Substitutions

The following substitutions will be honored on a routine basis:

1. Structures Classes (old -> new)
 - 261 -> 262
 - 361 -> 461
 - 471 -> 371
2. Geotechnical Classes (old -> new)
 - 330 -> 331 and 310 (general lab)
 - 435 -> 431
3. Transportation Courses (old->new)
 - 351 -> 455
 - 352 -> 355
4. Environmental Courses (old->new)
 - 380 -> 381
 - 480 -> 481
5. Water Resources Courses (old->new)
 - 390 -> 391 and 496
 - 416 -> 491 or BSE 416
6. Supporting Courses (old->new)
 - 321 old -> 321 new
 - BSET 414 -> CE300 (CADD)
 - CE305(1) plus something-> CE305 (2)

Critical Scheduling

The level II courses in each concentration area will only be offered once per year. Therefore, you need to pay close attention in order to enroll in classes needed for graduation during the semester they are offered. We will offer the level II courses (and their laboratories) on the following schedule:

Fall Semester Offerings

461/463 Structures II and lab

494/496 Water Resources II and lab

455/456 Transportation II and lab

Spring Semester Offerings

431/432 Geotechnical II and lab

481/482 Environmental II and lab

Note that if you plan to graduate in Fall '09 in the old curriculum, you need to take 435 and 480 next semester (Spring 09).

Note that if you plan to graduate in Spring '10 in the old curriculum, you need to take (416 or 494) and (351 or 455) no later than Fall semester '09.

Take CE305 next semester if you don't plan to migrate to the new curriculum. If you do plan to migrate, you should wait to take it until Fall '09 or later.

In Fall '09 there is a scheduling conflict between CE440 (required core) and the 496 Water Resources Lab. Plan accordingly.