CIVIL ENGINEERING PROGRAM – University of Connecticut, Storrs, CT

(Catalog of 2013-2014)

NORMAL SEMESTER BY SEMESTER COURSE SEQUENCE (128 credits)

FIRST YEAR - First Semester	**Cr.**	**Second Semester**	**Cr.**
CHEM 1127Q or 1147Q General Chemistry	4	**CHEM 1128Q or 1148Q** General Chemistry	4
MATH 1131Q Calculus I	4	**MATH 1132Q** Calculus II	4
ENGR 1000 Orientation to Engineering	1	**ENGR 1166** Foundations of Engineering	3
CSE 1010 Intro to Computing for Engineers	3	(1)(2) CA 1 (_____)	3
(1) **ENGL 1010** Seminar in Academic Writing **or ENGL 1011** Sem. in Writing thru Literature	4	(1)(2) CA 2 (_____)	3
TOTAL	**16**	**TOTAL**	**17**

SECOND YEAR - First Semester		**Second Semester**	
PHYS 1501Q Physics for Engineers I	4	**PHYS 1502Q** Physics for Engineers II	4
MATH 2110Q Multivariable Calculus	4	**MATH 2410Q** Elem. Differential Equations	3
CE 2110 Applied Mechanics I	3	**CE 3110** Mechanics of Materials	3
CE 2410 Geomatics & Spatial Meas.	4	**CE 2710** Transportation Engineering	3
PHIL 1104 Philosophy & Ethics (CA 1)	3	(2) CA 2 (_____)	3
TOTAL	**18**	**TOTAL**	**16**

THIRD YEAR - First Semester		**Second Semester**	
CE 2210 / ENVE 2330 Decision Analysis in CEE	3	**CE 3520** Civil Engineering Materials **or ENVE 3200** Environmental Engineering Lab	3
CE / ENVE 2310 Environmental Engineering Fundamentals	3	**CE 3610** Basic Structural Analysis **or ENVE 3220** Water Quality Engineering	3
CE / ENVE 3120 Fluid Mechanics	3	(3) **CE 3630** Steel Structure Design or (4) Prof. Req. (_____)	4 or 3
CE 3510 Soil Mechanics I	4	(5) Science Elective (_____)	3 or 4
(2) GenEd: CA 4 (_____)	3	(2) GenEd: CA 4 (_____)	3
TOTAL	**16**	**TOTAL**	**16(6)**

FOURTH YEAR – First Semester		**Second Semester**	
CE 4900W Civil Engineering Projects I	2	**CE 4920W** Civil Engineering Projects II	2
(4) Prof. Req. (_____)	3	**ME 2233** Thermodynamic Principles	3
Or (3) **CE 3640** Rein. Concrete Struc. Design	or 4	**Or CHEG 2111** Chem. Engr. Thermodynamics	
(4) Prof. Req. (_____)	3	(4) Prof. Req. (_____)	3
(4) Prof. Req. (_____)	3	(4) Prof. Req. (_____)	3
Elective(s) (_____)	4(6)	(4) Prof. Req. (_____)	3
TOTAL	**15(6)**	**TOTAL**	**14(6)**

NOTES:

(1) These courses may be taken either semester in the first year.

(2) CA = Content Area in General Education (GenEd) Requirements (For current lists of GenEd courses, visit http://geoc.uconn.edu). These courses may be taken at any time.

(3) All students must take either CE 3630 or 3640.

(4) Professional Requirements must be chosen to include at least one course from four of the following technical areas: Construction Management (CE 4210), Environmental/Sanitary (ENVE 3220 if also taken CE 3610, or ENVE 4310), Geotechnical (CE 4510 or 4541), Hydraulic/Water Resources (ENVE 4810 or 4820), Structural (CE 3630 or 3640), Surveying/Geodetic (CE 4410), and Transportation (CE 4580 or 4710 or 4720). The remaining two courses may be any course in engineering, mathematics or science not already used to satisfy another requirement or MGMT 5335 at the 2000-level or higher. See the next page for more details.

(5) The Science Elective must be taken from the courses listed on the next page (or an approved substitute).

(6) The credit totals for the last three semesters depend on how many structural design courses are chosen and when they are taken. If the second structural design class is selected as a professional requirement or if a 4 credit science elective is chosen, the number of free elective credits is reduced by one (each).

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PROFESSIONAL REQUIREMENTS AND SCIENCE ELECTIVE

The professional requirements are satisfied by eighteen (18) credits of 2000-level or higher courses in engineering, science or mathematics, including MGMT 5335. Following are specific restrictions on these courses:

Proficiency in 4 CE Areas (12 Credits): All CE students must take one course in each of the seven (7) technical areas listed in the table below as required courses. In addition, for the Professional Requirements, each student must take a second course from four of these areas listed as "Proficiency Courses". (F) and (S) indicates if the course is typically offered in the First or Second semester. Some are offered in alternate years as indicated.

Technical Areas	**Required Courses**	**Proficiency Courses** (4 required @ 1 each from 4 Different Areas)
Construction Management	CE 2210 or ENVE 2330 Decision Analysis in CEE (F)	CE 4210 Operations Research in CEE (S)
Environmental	ENVE 2310 Environmental Engineering Fundamentals (F)	ENVE 3220* Water Quality Engineering (S) or ENVE 4310 Environmental Modeling (S)
Geotechnical	CE 3510 Soil Mechanics (F)	CE 4510 Foundation Design (S – even) or CE 4530 Geoenvironmental Engr (S – odd) or CE 4541 Soil Mechanics II (F – even)
Hydraulic / Water Resources	CE 3120 or ENVE 3120 Fluid Mechanics (F)	ENVE 4810 Engineering Hydrology (F) or ENVE 4820 Hydraulic Engineering (S)
Structural	CE 3630 Steel Structure Design (S) or CE 3640 Reinforced Concrete Structure Design (F)	**CE 3630 Steel Structure Design (S) or CE 3640 Reinforced Concrete Structure Design (F)
Surveying / Geodetic	CE 2410 Geomatics and Spatial Measurement (F)	CE 4410 Computer Aided Site Design (S)
Transportation	CE 2710 Transportation Engineering (S)	CE 4710 Case Studies in Transp. Engr. (F) or CE 4720 Highway Engr. – Design (S – odd) or CE 4750 Pavement Design (F – even)

*ENVE 3220 is permitted for Professional Requirements only if CE 3610 was also taken.
**To meet proficiency in the Structural area, the second of the two courses must be taken.

Restrictions on the Remaining Six (6) Credits of Courses:

- CE 3520 Civil Engineering Materials (S) or ENVE 3200 Environmental Engineering Laboratory (S) may be used only if the other was taken for the laboratory requirement
- CE 3610 Basic Structural Analysis (S) or ENVE 3220 Water Quality Engineering (S) may be used only if the other was taken to meet CE requirements

Additional CE Courses that can be used for Professional Requirements:

- ENVE 3530 or CE 3530 or GSCI 3710 Engineering and Environmental Geology (S - odd)
- CE 4610 Advanced Structural Analysis (F)
- CE 4730 Transportation Planning (F – odd)
- CE 4740 Traffic Engineering Characteristics (F – even)

Science Elective: at least one of the following (or an approved substitution) must be taken:

- BIOL 1107: Principles of Biology (4 credits with lab; recommended concurrent CHEM 1127)
- GSCI 1050 / 1051: Earth and Life Through Time (4 credits with lab / 3 credits);
- EEB 2208: Introduction to Conservation Biology (3 credits)
- GEOG 1300: Climate, Weather and the Environment (3 credits)
- GSCI 3710: Engineering and Environmental Geology (3 credits; recommended prep GSCI 1050 or 1051)
- ENVE 4320: Ecological Engineering (3 credits; recommended prep ENVE3220 and 4210)
- NRE 3105: Wetlands Biology and Conservation (3 credits; recommended prep BIOL 1107 and 1108)
- NRE 4135: Introduction to Ground-water Hydrology (4 credits with lab; prereq MATH 1122 or 1132 and GSCI 1050 or 1051 and 1052).