# ENVIRONMENTAL ENGINEERING PROGRAM – University of Connecticut

(Catalog of 2011-2012)

## NORMAL SEMESTER BY SEMESTER COURSE SEQUENCE (128 credits)

| **FIRST YEAR - First Semester** | **Cr.** | **Second Semester** | **Cr.** |
|---|---|---|---|
| **CHEM 1127Q** General Chemistry | 4 | **CHEM 1128Q** 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 | **PHIL 1104** Philosophy & Ethics (CA 1) | 3 |
| **ENVE 2310** Environmental Engineering Fundamentals | 3 | **CHEG 2111** Chemical Engineering Thermodynamics | 3 |
| (3) Professional Elective | 3 | (3) Professional Elective | 3 |
| **TOTAL** | **17** | **TOTAL** | **16** |

| **THIRD YEAR - First Semester** | | **Second Semester** | |
|---|---|---|---|
| **CE 2210** Decision Analysis in CEE | 3 | **ENVE 2310** The Environmental Debate | 1 |
| **ENVE 3120** Fluid Mechanics OR **CHEG 3123** Transfer Operations | 3 | **ENVE 3200** Environmental Engineering Lab | 3 |
| **ENVE 4210** Environ Engineering Chemistry | 3 | **ENVE 3220** Water Quality Engineering | 3 |
| (3) Professional Elective | 3 | **ENVE 4310** Environmental Modeling | 3 |
| (3) Professional Elective | 3 | (3) Professional Elective | 3 |
| (2) GenEd: CA 2 (_____) | 3 | (2) GenEd: CA 4 (_____) | 3 |
| **TOTAL** | **18** | **TOTAL** | **16** |

| **FOURTH YEAR – First Semester** | | **Second Semester** | |
|---|---|---|---|
| **ENVE 4910W** Environmental Engineering Design I | 2 | **ENVE 4920W Environmental Engineering Design II** | 2 |
| **ENVE 3270** Environmental Microbiology | 3 | **ENVE 3230 Introduction to Air Pollution** | 3 |
| (3) Professional Elective | 3 | **ENVE 4996** Thesis | 3 |
| Free Elective | 3 | (3) Professional Elective | 3 |
| (2) GenEd: CA 4 (_____) | 3 | Free Elective | 3 |
| **TOTAL** | **14** | **TOTAL** | **14** |

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 and CA assignments to particular semesters are indicative only.

(3) There are 7 total professional ELECTIVE courses that are to be selected to meet the following requirements:

Natural Resource Requirement (2 Courses):

- NRE 3155- Water Quality Management (Fall semester even years) OR
- ENVE 4320 Ecological Principles and Engineering

AND

- NRE 3205-Stream Ecology (Spring semester) OR
- NRE 3105-Wetlands Biology & Conservation (Fall odd yrs)

Earth Science Requirement (1 Course):

- NRE 4135-Intro. to Groundwater Hydrology (Fall semester) OR
- ENVE 3530- Engr. & Env. Geology (Spring semester, odd years)

Hydrologic Science Requirement (1 Course)

- ENVE 4810-Engineering Hydrology (Fall semester) OR
- ENVE 4820-Hydraulic Engineering (Spring semester)
- Professional Electives (3 Courses): At least one course from three different focus areas (see table)

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## ENVE Professional Requirements

At least *one* course each to strengthen *three* of the following nine focus areas:

- ***Water Supply and Natural Resources***

ENVE 4820 Hydraulic Engineering
GEOG 2300 Introduction to Physical Geography
GEOG 3320W Environmental Evaluation and Assessment
GEOG 3410 Human Modification of Natural Environments
MARN 3016 Marine Microbiology
NRE 3105 Wetlands Biology and Conservation
NRE 3535 Introductory Remote Sensing
NRE 4000W Principles of Renewable Natural Resources

- ***Environmental Systems Modeling***

CHEG 3151 Process Kinetics
CHEG 3260 Introduction to Environmental Rate Processes
CHEG 4147 Introduction to Process Dynamics and Control
OPIM 3610 Operations Research for Information Systems Analysis

- ***Wastewater Management***

MARN 4030W Marine Biogeochemistry
MCB 2610 Fundamentals of Microbiology
NRE 4165 Soil, Water & Waste Engineering
OSH 4220 Pollution Control and Prevention I

- ***Environmental Chemistry***

CHEM 3332 Quantitative Analytical Chemistry
CHEM 3563 Physical Chemistry
CHEM 3564 Physical Chemistry
EEB 3247 Limnology
EEB 4248 Limnological Methods
SOIL 3410 Soil Chemistry Components

- ***Solid Waste Management***

CE 3510 Soil Mechanics I
GEOG 3340 Environmental Planning and Management
NRE 4165 Soil & Water Management

- ***Hazardous Waste Management***

MCB 2000 Introduction to Biochemistry
MCB 3635 Applied Microbiology
MCB 3640W Bacterial Diversity and Ecology
SOIL 4420 Soil Chemistry Processes

- ***Atmospheric Systems & Air Pollution Control***

GEOG 3400 Climate and Weather
ME 3239 Pollution from Combustion
NRE 3115 Air Pollution
NRE 3145 Meteorology
NRE 3535 Introductory Remote Sensing

- ***Environmental and Occupational Health***

AH 3175 Environmental Health
AH 3275 HAZWOPER
OSH 3271 Workplace Chemical Safety
OSH 3277W Hazardous Chemicals

- ***Hydrology and Earth Resources***

CE 3510 Soil Mechanics I
GSCI 3510 Applied Geophysics for Geologists and Engineers
EEB 3247 Limnology
ENVE 3530 Engineering & Environmental Geology
ENVE 4810 Engineering Hydrology
NRE 3145 Meteorology
NRE 3205 Stream Ecology
NRE 4135C Introduction to Groundwater Hydrology

- ***Environment and the Society***

OSH 3275 Workplace Environmental Law and Regulations
NRE 3245 Environmental Law
SOCI 3407W Energy, Environment and Society
ARE 3434 Environment and Resource Policy
ARE 4462 Economics of Natural Resource Use
MGMT 5335 Venture Planning, Management, and Growth
LAND 2210 The Common Landscape of the U.S.A.: Rights, Responsibilities, and Values