**ENVIRONMENTAL ENGINEERING PROGRAM – University of Connecticut**
(Catalog of 2017-2018)

## 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 (F/S) | 3 | **ENVE 1000** Environmental Sustainability (CA2) | 3 |
| **ENGL 1010** Seminar in Academic Writing **or ENGL 1011** Sem. in Writing thru Literature (F/S) | 4 | (1) CA 1 (_____) | 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 (F/S) | 3 | **PHIL 1104** Philosophy & Ethics (CA1) | 3 |
| **ENVE 2310** Environmental Eng'g Fundamentals | 3 | **CHEG 2111** Chemical Eng'g Thermodynamics or **ME 2233** (F/S) | 3 |
| **CE 2251** Probability and Statistics in CEE (F/S) | 3 | **ENVE 3200** Environmental Engineering Lab | 3 |
| **TOTAL** | **17** | **TOTAL** | **16** |

| **THIRD YEAR - First Semester** | | **Second Semester** | |
|---|---|---|---|
| **NRE 3155 (even years) or NRE 3205 (odd years) or NRE 3105 (odd years)** | 3 | **ENVE 3220** Water Quality Engineering | 3 |
| **ENVE 3120** Fluid Mechanics (F/S) | 4 | **ENVE 3230** Introduction to Air Pollution | 3 |
| **ENVE 3270** Environmental Microbiology | 3 | (1) GenEd: CA 4(I) (_____) | 3 |
| **ENVE 4210** Environ. Engineering Chemistry | 3 | (4) Professional Elective | 3 |
| **NRE 4135** Groundwater Hydrology (2) OR Professional Elective (4) | 3 | **ENVE 3530** Engineering and Environmental Geology (2) OR Professional Elective (4) | 3 |
| **CE 2211** Engineering Economics (F/S) | 1 | | |
| **TOTAL** | **17** | **TOTAL** | **15** |

| **FOURTH YEAR – First Semester** | | **Second Semester** | |
|---|---|---|---|
| **ENVE 4910W** Environmental Eng'g Design I | 2 | **ENVE 4920W** Environmental Eng'g Design II | 2 |
| **ENVE 4320** Ecological Principles & Eng'g | 3 | **ENVE 4310** Environmental Modeling | 3 |
| **ENVE 4810** Engineering Hydrology (3) or Professional Elective (4) | 3 | **ENVE 4820** Hydraulic Engineering (3) or Professional Elective (4) | 3 |
| (1) GenEd: CA 4 (_____) | 3 | (4) Professional Elective | 3 |
| (1) GenEd: CA 2 (_____) | 3 | Free Elective | 3 |
| Free elective | 3 | | |
| **TOTAL** | **17** | **TOTAL** | **14** |

NOTES: (F/S): these courses are offered both Fall and Spring semesters

(1) 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.

(2) Earth Science Requirement (1 Course):

- NRE 4135-Intro. to Groundwater Hydrology (Fall semester) OR
- ENVE 3530- Engr. & Env. Geology (Spring semester) OR
- ENVE 4530 Geoenvironmental Engineering (Spring semester)

(3) Hydrologic Science Requirement (1 Course)

ENVE 4810-Engineering Hydrology (Fall semester) OR

- ENVE 4820-Hydraulic Engineering (Spring semester)

(4) Professional Electives (4 Courses): At least one course from four different focus areas (see pg. 2 for list of approved courses). ENVE 4886 Thesis I (1 cr) plus ENVE 4986 Thesis II (2 cr) may fulfill one professional elective. Honors students must fulfill one professional elective using ENVE 4886 + 4986. ENVE 4886 + 4986 is recommended as a professional elective for students planning to pursue graduate studies. Courses used to fulfill Natural Resource, Earth Science or Hydrologic Science requirements cannot also count as Professional Electives.

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**ENVE Professional Electives**

**Area 1: Data Collection and Analysis**
NRE 3535 Remote Sensing of the Environment
GEOG 2500 Introduction to GIS
ME 3263 Introduction to Sensors and Data Analysis
CE 2410 Geomatics & Spatial Measurement
CE 4410 Computer Aided Site Design

**Area 2. Renewable Energy**
ME 3270 Fuel Cells
ME 3285 Sustainable Energy Sources and Systems
* Courses offered as Special Topics in Renewable Energy also qualify as PR under this area

**Area 3. Systems Analysis**

CHEG 3151. Process Kinetics
CHEG 4147. Introduction to Process Dynamics and Control.
CE 4210. Operations Research in Civil and Environmental Engineering

**Area 4. Environmental Chemistry**
CHEM 2241 or CHEM 2443. Organic Chemistry
CHEM 4370. Environmental Chemistry - Atmosphere
SOIL 3410. Soil Chemistry Components
SOIL 4420. Soil Chemistry Processes
MARN 4030W. Chemical Oceanography
NRE 3155. Water Quality Management

**Area 5. Environmental Biology**
MCB 2610. Fundamentals of Microbiology

NRE 3105. Wetlands Biology and Conservation

NRE 3205. Stream Ecology

**Area 6. Water Resources**
ENVE 4810. Engineering Hydrology
ENVE 4820. Hydraulic Engineering
NRE 3125 Watershed Hydrology
NRE 4135. Introduction to Groundwater Hydrology
NRE 4165. Soil and Water Management and Engineering

**Area 7. Geoenvironmental Processes**
CE 3510. Soil Mechanics
CE 4530. Geoenvironmental Engineering
ENVE 3530. Engineering and Environmental Geology
NRE 4165. Soil and Water Management and Engineering.

**Area 8. Atmospheric Processes**

GEOG 3400. Climate and Weather

NRE 3145. Meteorology
NRE 3146 Climatology
ME 3239. Combustion for Energy Conversion

**Area 9. Management and Policy**
AH 3275. HAZWOPER
ARE 3434. Environment and Resource Policy
ARE 4462. Economics of Natural Resource Use
EEB 3205. Current Issues in Environmental Science
GEOG 3320W. Environmental Evaluation and Assessment
GEOG 3340. Environmental Planning and Management
LAND 3230W. Environmental Planning and Landscape Design
MEM 2221. Principles of Engineering Management
NRE 3245. Environmental Law