

# UConn | COLLEGE OF AGRICULTURE, HEALTH AND NATURAL RESOURCES

## PLAN OF STUDY FORM

Catalog Year 2015-2016

Environmental Sciences

### DIRECTIONS

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- This Plan of Study (plan) is used as a *worksheet* during initial registration and every subsequent semester to determine minimum requirements and progress toward completing the degree. A *preliminary plan* is developed and submitted to the advisor by the end of the sophomore year (or equivalent time for transfer students).
- **A final plan must be approved by advisor and department head, and submitted to the Degree Auditor (Unit 4077, Wilbur Cross Building) no later than the end of the tenth week of classes of the semester prior to the anticipated semester of graduation.**
- Students must complete all major and general education course requirements and earn:
  - At least 120 credits toward the degree**
  - At least a 2.0 Cumulative Grade Point Average (CGPA)**
  - At least a 2.0 Grade Point Average for ALL courses listed in the 36 Credit Requirement**
- University of Connecticut General Education Requirements (GER), are outlined in the Academic Regulations section of the *Undergraduate Catalog*. Only approved courses may be used to meet requirements.
- Students should use their Academic Requirements Report (accessible in Student Admin) along with the Plan of Study to view their graduation requirements and assess status toward degree. Students must be attentive to credit restrictions (repeated courses, out of sequence classes, etc.). Courses taken Pass/Fail may NOT be used to meet any requirements.

### STUDENT AND DEGREE INFORMATION

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**Must be filled out completely on your final plan of study.**

Select one:  Preliminary Plan  Final Plan

Name \_\_\_\_\_ Student I.D. \_\_\_\_\_  
First Middle Last

Phone # \_\_\_\_\_ Email Address \_\_\_\_\_

Current Address: \_\_\_\_\_  
Street City/Town State Zip Code

Month and Year of Anticipated Graduation  May  August  December Year: \_\_\_\_\_

Are you pursuing a double major in CAHNR?  Yes  No If Yes, submit Double Major Attachment with final plans of study.

Please list below any minors that you plan to earn and submit a final minor plan of study with your final major plan of study.

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At the completion of semester you intend to graduate, will you have earned 120 or more credits?  Yes  No

### APPROVAL SIGNATURES

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Student's Signature \_\_\_\_\_ Date \_\_\_\_\_

Advisor's Signature \_\_\_\_\_ Date \_\_\_\_\_

Department Head's Signature \_\_\_\_\_ Date \_\_\_\_\_

**The final plan must be submitted to the Registrar's Office in the Wilbur Cross Building.  
Please remember to keep a copy of the plan for your records.**

## PART I: GENERAL EDUCATION REQUIREMENTS (GER) <sup>1</sup>

Courses approved to meet GER are outlined in the Academic Regulations section of the *Undergraduate Catalog*.

*Courses in Content Areas 1-3 must be in 6 different departments.*

*One course from Content Area 4 may be used to fulfill a requirement in Content Areas 1-3.*

Content Area	Dept.	Course No.	Credits	Semester/Year	Grade
Foreign Languages (3 years single language in high school) OR pass second course in first-year college sequence					
	_____	_____	_____	____ / ____	____
	_____	_____	_____	____ / ____	____
	ENGL 1010 or 1011	_____	_____	____ / ____	____
	"W" Course	_____	_____	____ / ____	____
	"W" Course ( <i>within major</i> )	_____	_____	____ / ____	____
	"Q" Course	_____	_____	____ / ____	____
	"Q" Course ( <i>MATH or STAT</i> )	_____	_____	____ / ____	____
1	Arts & Humanities ( <i>total 6 credits</i> )	_____	_____	____ / ____	____
		_____	_____	____ / ____	____
2	Social Sciences ( <i>total 6 credits</i> )	_____	_____	____ / ____	____
		_____	_____	____ / ____	____
3	Science & Technology ( <i>total 6 credits – include one 4-credit laboratory course</i> )	_____	_____	____ / ____	____
		_____	_____	____ / ____	____
4	Diversity & Multiculturalism ( <i>total 6 credits – one must be "International" course</i> )	_____	_____	____ / ____	____
		_____	_____	____ / ____	____

**Computer Technology Competency:** See major requirements

**Information Literacy Competency:** See major requirements

## ENVIRONMENTAL SCIENCES

### PART II: INDIVIDUAL COURSE REQUIREMENTS OF ENVIRONMENTAL SCIENCES MAJOR <sup>1</sup>

Courses in this section that are numbered 2000-level or above may also be used to meet the 36 Credit Requirement (Part III).

**ALL of required courses in Basic (Natural) Sciences:**

Dept.	No.	Course Title	Credits	Semester/Year	Grade
BIOL	1107	Principles of Biology I	4	_____ / _____	____
BIOL	1108 or 1110	Principles of Biology II or Introduction to Botany	4	_____ / _____	____
CHEM	1127Q and 1128Q or 1124Q, 1125Q and 1126Q	General Chemistry or Fundamentals of General Chemistry	—	_____ / _____ _____ / _____ _____ / _____	____ ____ ____
MATH	1131Q and 1132Q	Calculus I and II	8	_____ / _____ _____ / _____	____ ____
PHYS	1201Q and 1202Q or 1401Q and 1402Q	General Physics or General Physics with Calculus	8	_____ / _____ _____ / _____	____ ____
STAT	1000Q or 1100Q or 3025Q	Intro to Statistics or Elementary Concepts of Statistics or Statistical Methods (Calculus Level I)	—	_____ / _____	____
NRE	1000	Environmental Science	3	_____ / _____	____

\*ARE 1150, ECON 1200 or 1201, GEOG 2300, GSCI 1050, and MARN 1002 are pre-requisites for several upper division course concentration options. It is the student's responsibility to ensure that all pre-requisites in the catalog for concentration courses have been satisfied.

**Required Sophomore Seminar Course:** (A 2000-level environmental sciences seminar course as approved by advisor)

Dept.	No.	Course Title	Credits	Semester/Year	Grade
_____	_____	_____	—	_____ / _____	____

**Required Capstone Course:**

Dept.	No.	Course Title	Credits	Semester/Year	Grade
NRE	4000W	Natural Resources Planning and Management	3	_____ / _____	____

**Required Internship or Research Experience (1-6 credits):** (approved by advisor)

Dept.	No.	Course Title	Credits	Semester/Year	Grade
_____	_____	_____	—	_____ / _____	____

*Writing Competency:* Students must pass NRE 4000W for required 2000-level or above course approved by major.

*Computer Technology Competency:* Students must pass NRE4000W.

*Information Literacy Competency:* Students must pass NRE 4000W.

In addition, all students majoring in Environmental Sciences must declare and fulfill the requirements of a concentration in a discipline associated with the program before graduation. Approved concentrations are listed below:

## SUSTAINABLE SYSTEMS CONCENTRATION

Students must complete at least two courses from each of the following Knowledge Competencies. The same course cannot be used to fulfill more than one knowledge competency.

### Resource Management - TWO of the following:

Dept.	No.	Course Title	Credits	Semester/Year	Grade
EEB	2208	Introduction to Conservation Biology	3	_____ / _____	_____
GEOG	3340	Environmental Planning and Management	3		
MARN	3030	Coastal Pollution and Bioremediation	3		
NRE	2010	Natural Resources Measurements	3		
NRE	2215	Introduction to Water Resources	3		
NRE	2325	Fish and Fisheries Conservation	3		
NRE	2345	Introduction to Fisheries and Wildlife	3		
NRE	3105	Wetlands Biology and Conservation	3		
NRE	3125	Watershed Hydrology	3		
NRE	3155	Water Quality Management	3		
NRE	3305	African Field Ecology & Renewable Resources Management	4		
NRE	3335	Wildlife Management	3		
NRE	3345/W	Wildlife Management Techniques	4		
NRE	3500	Exurban Silviculture	4		
NRE	3535	Remote Sensing of the Environment	3		
NRE	4335	Fisheries Management	4		
NRE	4575	Natural Resource Applications of GIS	4		

### Ecological Systems - TWO of the following:

Dept.	No.	Course Title	Credits	Semester/Year	Grade
EEB	2244/W	Evolutionary Biology	___	_____ / _____	_____
EEB	3247	Freshwater Ecology	4		
EEB	4230W	Methods of Ecology	4		
EEB /MARN	3230 3014	Marine Biology	3		
NRE	2455	Forest Ecology	3		
NRE	3205	Stream Ecology	3		
NRE	4340	Environmental Toxicology	3		

Students must complete at least one course from each of the following Knowledge Competencies. The same course cannot be used to fulfill more than one knowledge competency.

### Built Systems - ONE of the following:

Dept.	No.	Course Title	Credits	Semester/Year	Grade
AH	3175	Environmental Health	3	_____ / _____	_____
HORT	3765	Phytotechnology: Use of Plants for Ecosystem Services	3		
LAND	3230W	Environmental Planning and Landscape Design	3		
NRE	3265	Sustainable Urban Ecosystems	3		

**Governance & Policy - ONE of the following:**

Dept.	No.	Course Title	Credits	Semester/Year	Grade
AH	3174	Environmental Laws, Regulations and Issues	3	_____ / _____	_____
ARE	3235	Marine Resource and Environmental Economics	3		
ARE	3434	Environmental and Resource Policy	3		
ARE	3437	Marine Fisheries Economics and Policy	3		
ARE	4438	Valuing the Environment	3		
ARE	4462	Environmental and Resource Economics	3		
ECON /MAST	2467	Economics of the Oceans	3		
GEOG	3320W	Environmental Evaluation & Assessment	3		
MAST /POLS	3832	Maritime Law	3		
NRE	3201	Conservation Law Enforcement	3		
NRE	3245	Environmental Law	3		
NRE	3246	Human Dimensions of Natural Resources	3		
POLS	3412	Global Environmental Politics	3		
SOCI	3407/W	Energy, Environment, and Society	3		

**Ethics, Values, & Culture - ONE of the following:**

Dept.	No.	Course Title	Credits	Semester/Year	Grade
ANTH	3339	Cultural Designs for Sustainability	3	_____ / _____	_____
ENGL	3240	American Nature Writing	3		
ENGL	3715	Nature Writing Workshop	3		
GEOG	3410	Human Modification of Natural Environments	3		
HIST	3540	American Environmental History	3		
HIST	3542	New England Environmental History	3		
JOUR	3046	Environmental Journalism	3		
PHIL	3216	Environmental Ethics	3		
SOCI	2701	Sustainable Societies	3		
SOCI	2705	Sociology of Food	3		
SOCI	2709W	Society and Climate Change	3		
SOCI	3407/W	Energy, Environment, and Society	3		

**Economics & Business - ONE of the following:**

Dept.	No.	Course Title	Credits	Semester/Year	Grade
ARE	3235	Marine Resource and Environmental Economics	3	_____ / _____	_____
ARE	4305	Role of Ag & Natural Resources in Economic Development	3		
ARE	4438	Valuing the Environment	3		
ARE	4444	Economics of Energy and the Environment	3		
ARE	4462	Environmental and Resource Economics	3		
ARE	4464	Benefit Cost Analysis and Resource Management	3		
ECON /MAST	2467	Economics of the Oceans	3		
ECON	3466	Environmental Economics	3		
ECON	3473	Economic Development	3		

## GLOBAL CHANGE CONCENTRATION

Students must complete at least two courses from each of the following Knowledge Competencies. The same course cannot be used to fulfill more than one knowledge competency.

### ***Climate Change and its Impacts - TWO of the following:***

Dept.	No.	Course Title	Credits	Semester/Year	Grade
GEOG	3400	Climate and Weather	3	_____ / _____	_____
GEOG	4300	Advanced Physical Geography	3		
GSCI	3010	Earth History and Global Change	3		
MARN	3000	The Hydrosphere and Global Climate	3		
NRE	3115	Air Pollution	3		
NRE	3146	Climatology	3		
NRE	4170	Climate-Human-Ecosystem Interactions	3		

### ***Land and Ocean Use and its Impacts - TWO of the following:***

Dept.	No.	Course Title	Credits	Semester/Year	Grade
EEB	2208	Introduction to Conservation Biology	3	_____ / _____	_____
GEOG	3310	Fluvial Geomorphology	3		
GEOG	3410	Human Modifications of Natural Environments	3		
GSCI	3020	Earth Surface Processes	3		
GSCI /MARN	3230	Beaches and Coasts	3		
HORT	3765	Phytotechnology: Use of Plants for Ecosystem Services	3		
MARN	3001	Coastal Systems Science II	4		
MARN	3030	Coastal Pollution and Bioremediation	3		
MARN	4066	River Influences on the Marine Environment	3		
NRE	2215	Introduction to Water Resources	3		
NRE	2325	Fish and Fisheries Conservation	3		
NRE	2345	Introduction to Fisheries and Wildlife	3		
NRE	3105	Wetlands Biology and Conservation	3		
NRE	3115	Air Pollution	3		
NRE	3155	Water Quality Management	3		
NRE	4340	Environmental Toxicology	3		
NRE /GSCI	4135 4735	Introduction to Ground Water Hydrology	4		

### ***Natural Science - TWO of the following:***

Dept.	No.	Course Title	Credits	Semester/Year	Grade
CHEM	4370	Environmental Chemistry – Atmosphere	3	_____ / _____	_____
CHEM	4371	Environmental Chemistry – Hydrosphere	3		
EEB	2244/W	General Ecology	4		
EEB	2245/W	Evolutionary Biology	___		
EEB	3247	Freshwater Ecology	4		
EEB /MARN	3230 3014	Marine Biology	3		
EEB /GSCI	4120	Paleobiology	4		

GEOG	2300	Introduction to Physical Geography	3		
MARN	2002	Coastal Systems Science I	3		
MARN	2060	Introduction to Coastal Meteorology	3		
MARN	3003Q	Environmental Reaction and Transport	4		
MARN	4030W	Marine Biogeochemistry	3		
MARN	4060	Physical Oceanography	3		
NRE	2455	Forest Ecology	3		
NRE	3125	Watershed Hydrology	3		
NRE	3145	Meteorology	3		
NRE	3205	Stream Ecology	3		
SOIL	2120	Environmental Soil Science	3		
SOIL	3410	Soil Chemistry Components	4		

Students must complete at least one course from each of the following Knowledge Competencies. The same course cannot be used to fulfill more than one knowledge competency.

**Methods - ONE of the following:**

Dept.	No.	Course Title	Credits	Semester/Year	Grade
EEB	4230W	Methods of Ecology	4		
ENVE	2251	Probability and Statistics in Civil Engineering	3		
GEOG	3300	Principles and Applications of Physical Geography	4		
GEOG	3500Q	Geographic Data Analysis	4		
GEOG /GSCI	4230	GIS and Remote Sensing for Geoscience Applications	3		
GEOG /MARN	3505	Remote Sensing of Marine Geography	3		
GSCI	3710	Engineering and Environmental Geology	3		
MARN	3003Q	Environmental Reaction and Transport	4		
NRE	2000	Introduction to Geomatics	4		
NRE	2010	Natural Resources Measurements	3		
NRE	3305	African Field Ecology & Renewable Resources Management	4		
NRE	3345/W	Wildlife Management Techniques	4		
NRE	3535	Remote Sensing of the Environment	3		
NRE	4335	Fisheries Management	4		
NRE	4475	Forest Management	4		
NRE	4535	Remote Sensing Image Processing	3		
NRE	4544	Application of Surveying for Natural Resources	3		
NRE	4545	Geodesy	3		
NRE	4575	Natural Resource Applications of GIS	4		
NRE	4665	Natural Resources Modeling	3		
PHYS	2400	Mathematical Methods for the Physical Sciences	3		
STAT	2215Q	Introduction to Statistics II	3		
STAT	3025Q	Statistical Methods – Calculus Level 1	3		

**Governance & Policy - ONE of the following:**

Dept.	No.	Course Title	Credits	Semester/Year	Grade
AH	3174	Environmental Laws, Regulations and Issues	3	_____ / _____	_____
ARE	3235	Marine Resource and Environmental Economics	3		
ARE	3434	Environmental and Resource Policy	3		
ARE	3437	Marine Fisheries Economics and Policy	3		
ARE	4438	Valuing the Environment	3		
ARE	4462	Environmental and Resource Economics	3		
ECON /MAST	2467	Economics of the Oceans	3		
GEOG	3320W	Environmental Evaluation & Assessment	3		
MAST /POLS	3832	Maritime Law	3		
NRE	3201	Conservation Law Enforcement	3		
NRE	3245	Environmental Law	3		
NRE	3246	Human Dimensions of Natural Resources	3		
POLS	3412	Global Environmental Politics	3		
SOCI	3407/W	Energy, Environment, and Society	3		

**HUMAN HEALTH CONCENTRATION****ALL of the following:**

Dept.	No.	Course Title	Credits	Semester/Year	Grade
AH	3021	Environment, Genetics and Cancer	3	_____ / _____	_____
AH	3175	Environmental Health	3	_____ / _____	_____
AH	3275	HAZWOPER	3	_____ / _____	_____
ANSC	4341	Food Microbiology and Safety	3	_____ / _____	_____
MCB	2610	Fundamentals of Microbiology	4	_____ / _____	_____

**TWO of the following, totally 6 or more credits:**

Dept.	No.	Course Title	Credits	Semester/Year	Grade
ANSC	4642	Food Microbiology Laboratory	1	_____ / _____	_____
MCB	2400	Human Genetics	3		
MCB	3010	Biochemistry	5		
MCB	3011	Human Metabolism and Disease	2		
MCB	3201	Gene Expression	3		
MCB	3633	Pathogenic Microbiology	4		
MCB	4211	Basic Immunology	3		
PVS	2100	Anatomy and Physiology of Animals	4		

**ONE of the following:**

Dept.	No.	Course Title	Credits	Semester/Year	Grade
AH	3570	Health and Safety Management in the Workplace	3	_____ / _____	_____
AH	3571	Health Hazards in the Workplace	3		
AH	3573	Health and Safety Standards in the Workplace	3		
AH	3574	Ergonomics	3		
PVS	4300	Principles of Pathobiology	3		

**PART III: 36 CREDIT REQUIREMENT FOR ALL MAJORS <sup>1</sup>**

Each student is required to successfully complete at least 36 credits of courses that are numbered 2000-level or above in or relating to their major. These courses may also be used to meet other requirements. This group of courses must:

1. Total not less than 36 credits
2. Be numbered 2000 or above
3. Be approved by student's advisor and department head
4. Be taken at the University of Connecticut<sup>2</sup>
5. Include two or more departments
6. Include **at least 15 credits from departments in the College of Agriculture, Health and Natural Resources**
7. Have a combined Grade Point Average of at least 2.0
8. Not include more than 6 credits (combined) of Independent Study, Internship, or Field Studies (if included, these courses must be taken at the University of Connecticut)
9. Not be taken on Pass/ Fail (P@ / F@)
10. Not include more than 6 credits of Satisfactory/Unsatisfactory (S/U) coursework

Dept.	No.	Credits	Semester/Year	Grade
_____	_____	_____	____ / ____	_____
_____	_____	_____	____ / ____	_____
_____	_____	_____	____ / ____	_____
_____	_____	_____	____ / ____	_____
_____	_____	_____	____ / ____	_____
_____	_____	_____	____ / ____	_____
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_____	_____	_____	____ / ____	_____
_____	_____	_____	____ / ____	_____
_____	_____	_____	____ / ____	_____

Dept.	No.	Credits	Semester/Year	Grade
_____	_____	_____	____ / ____	_____
_____	_____	_____	____ / ____	_____
_____	_____	_____	____ / ____	_____
_____	_____	_____	____ / ____	_____
_____	_____	_____	____ / ____	_____
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_____	_____	_____	____ / ____	_____
_____	_____	_____	____ / ____	_____
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_____	_____	_____	____ / ____	_____
_____	_____	_____	____ / ____	_____
_____	_____	_____	____ / ____	_____
_____	_____	_____	____ / ____	_____
_____	_____	_____	____ / ____	_____

Credits from departments in CAHNR (15 required): \_\_\_\_\_

(CAHNR subject codes include AGNR, AH, ANSC, ARE, DGS, DIET, HORT, KINS, LAND, MLSC, MT, NRE, NUSC, PLSC, PVS, SOIL, TURF)

Total Credits in 36 credit group \_\_\_\_\_

<sup>1</sup>Courses taken on Pass/Fail may NOT be used to meet any requirements.

<sup>2</sup>**Residence Requirement.** It is expected that advanced course work in the major will be completed at the University of Connecticut. However, students may be eligible to use up-to six credits from other institutions in the 36-credit group if approved by their advisor and department head. These credits must be identified as courses comparable to specific University of Connecticut courses and cannot include internships, special topics, or non-specific discipline credits. Transfer students must complete at least 30 credits of 2000-level or higher course work at the University of Connecticut, including at least 15 credits in College of Agriculture, Health and Natural Resources courses.