

Environmental and Resource Science Major

Advisor Checklist

Name: _____
 Student ID#: _____

Minor: _____
 Date of Entry to Major: _____

UCD AND COLLEGE REQUIREMENTS (0-8 UNITS)

BACKGROUND

Subject A _____

American History/Inst. _____

May be satisfied by:

- 1 year High School US History/Government
- AP exam for American History/Government
- One of these courses:
 - AAS 10, 100, 120, 121
 - ASA 1, 2
 - ECN 111A, 111B
 - HIS 17A, 17B, 17C, 72A, 72B, 72C, 170A, 170B, 170C, 171A, 171B, 174A, 174B, 175A, 175B, 175C, 176A, 176B, 177A, 177B, 179, 180A, 180B, 183A, 183B
 - NAS 1, 10, 55, 116, 130A, 130B, 130C
 - POL 1, 5, 100, 101, 102, 103, 104, 105, 106, 108, 109, 130, 131, 160, 163
- Equivalent transfer credit

ENGLISH COMPOSITION (0-8)

English Composition Requirement* _____

May be satisfied by:

- English Composition Examination (offered each quarter)
- One course emphasizing written expression and one course emphasizing oral expression
 - Written: ENL 3; UWP 1, 18, 19, 101, 102A, 102B, 102C, 102D, 102E, 102F, 102G, 104A, 104B, 104C, 104D, 104E, 104F
 - Oral: one additional course from the list above or CMN 1, COM 1, 2, 3, 4, NAS 5

*note-Subject A must be satisfied before any writing course can count towards the General Education requirement

PREPARATORY SUBJECT MATTER (53-69 UNITS)

Biological Sciences (14-15)

Completed Outstanding

BIS 1A or 2A (I II III, 4-5 units) _____
 BIS 1B or 2B (I II III, 4-5 units) _____
 BIS 1C or 2C (I II III, 4-5 units) _____

Chemistry (10)

CHE 2A (I II III, 5) _____
 CHE 2B (I II III, 5) _____

Economics (4)

ECN 1A (I II III, 4) _____

Environmental Toxicology (3)

ETX 10 (I, 3) _____

Geology (3-4)

GEL 1 (I II III, 4) or
 GEL 50 (I, 3)

Environmental and Resource Science (4)

ERS 120 (II, 4) _____

Physics (6-12) (*Physics 7 or 9 required for Air Option*)

PHY 1A (I, 3) and 1B (II 3) or
 PHY 7A (I II III, 4), 7B (I II III, 4) and 7C (I II III, 4) or
 PHY 9A (III, 5), 9B (I, 5) and 9C (II, 5).

Mathematics (6-8)

MAT 16A (I II III, 3) and 16B (I II III, 3) or
 MAT 21A (I II III, 4) and 21B (I II III, 4)

Microcomputer (3-4)

Choose one from: ENG 6 (I II III, 4),
 PLS 21 (I II III, 3) PLS 121 (I, 4),
 ECS 10 (I II III, 4), or ECS 15 (I II III, 4)

Statistics (4)

Choose one from: STA 13 (I II III, 4),
 100 (I II III, 4), or 102 (I III, 4)

DEPTH SUBJECT MATTER (27-33 UNITS)

Agricultural Economics (3) *Choose one from:*

- _____ ARE 147/Resource and Environ. Policy Analysis (3, III) [prereq: ECN 1A, open to non-majors only]
- _____ ARE 147M/Resource and Env. Policy Analysis (2, III) [prereq: ECN 1A, open to non-majors only]
- _____ ARE 175/ Natural Resource Economics (3, III) [prereq: ARE 100B or ECN100]
- _____ ARE 176/ Environmental Economics (3, II) [prereq: ARE 100B or ECN100]

Atmospheric Resources (3-4) *Choose one from:*

- _____ ERS 131/Air as a Resource (3, III) [Prereq: CHE 10]
- _____ ATM 60/Atmospheric Physics and Dynamics (4, I) [Prereq: MAT 16A and PHY 5A or 7A]
(ATM 60 is required for the air option.)

Soil Science (5)

- _____ SSC 100/Principles of Soil Science (5, I) [Prereq: CHE 2A-2B, PHY 1A-1B, BIS 1A]

Written Expression (4) *Choose one from:*

- _____ UWP 101/Advanced Composition (4,I II III) [Prereq: UWP 1 or ENL 3 or the equiv., upper div. standing]
- _____ UWP 104A-F/Writing in the Professions (4,I II III) [Prereq: UWP 1 or ENL 3 or the equiv., upper div. standing]

Internship/Independent Study/Research (3)

- _____ ERS 192/198/199 (variable, all) (3 total units selected in consultation with adviser)

Social/Political Awareness (3-4) *Choose one from:*

- _____ PLS 101/Agriculture & the Environment (3, II) [Prereq: PLS 2 or consent]
- _____ ESP 161/Environmental Law (4, III) [Prereq: upper div. standing and one env. sci. course]
- _____ ESP 179/Environmental Impact Reporting (3, II) [Prereq: upper div. standing and one env. sci. course]
- _____ ETX 138/Legal Aspects (3, II) [Prereq: ETX 10 or 101 recommended]
- _____ GEL 134/Env. Geology & Land Use (3, II) [Prereq: one course in GEL, or consent]
- _____ NAC 120/Environmental Ethics (4, II) [Prereq: NAC 1]
- _____ POL 107/Environmental Politics & Admin. (4, IV) [Prereq: POL 1 or consent]
- _____ WFC 154/Conservation Biology (4, I) [Prereq: WFC 1]

Ecology (3-4) *Choose one from:*

- _____ ENT 104/Behavioral Ecology of Insects (3, II) [Prereq: introductory biology or zoology]
- _____ ERS 144/Trees & Forests (4, I) [Prereq: PLS 2 or BIS 1C or 2C]
- _____ ESP 100/General Ecology (4, I II) [Prereq: BIS 1A, 1B, 1C, MAT 16A, 16B; STA 13 recommended]
- _____ EVE 101/Introduction to Ecology (4, I II III) [Prereq: BIS 1A, 1B, 1C; MAT 16A, 16B, 16C or equiv.]
- _____ PLB 117/Plant Ecology (4, I) [Prereq: BIS 1A, 1B, 1C, or 2A, 2B, 2C]
- _____ PLB 142/Ecology Crop Systems (4, II) [Prereq: BIS 1C or PLS 2; MAT 16A or PHY 1A, or consent]
- _____ PLS 130/Rangeland Ecology (3, II) [Prereq: BIS 1C; intro ecology course and junior standing recommended]

Hydrologic Science (3-6) *Choose one from:*

- _____ ERS 100 Principles of Hydrology (4, I) [Prereq: CHE 2B, MAT 16B, and PHY 7A or 9A]
- _____ ERS 121/Water & Society (3, I) [Prereq: PHY 10 or GEL 1]

SPECIALIZATION

Environmental Resources (18-26 Units)

Provides general study of the physical, chemical and biological features of renewable natural resources, and the economic and social considerations associated with their use, protection and management. For those who plan careers associated with resource utilization and management, and those pursuing post-baccalaureate, academic, or professional training.

Completed

Take 2 classes (6-9 units):

- _____ SSC 111/Soil Microbiology (4, II) [Prereq: CHE 2C and BIS 1 or 2C]
- _____ SSC 112 Soil Ecology (3, I) [Prereq: BIS 1B, 1C, 100]
- _____ SSC 118/Soils in Land Use and the Environment (4, III) [Prereq: SSC 100 or consent]
- _____ GEL 130/Non-renewable Natural Resources (3, II) [Prereq: GEL 1] *** not offered since 2005***
- _____ GEL 134/Environmental Geology and Land Use Planning (3, II) [Prereq: one course in GEL, or consent]

Completed

Take 2 classes (6-8 units):

- _____ ATM 116/Climate Change (3, III)
- _____ ATM 124/Meteorological Instruments and Observations (3, I) [Prereq: ATM 60 and PHY 5C]
- _____ ATM 133/Biometeorology (4, II) [Prereq: one class in BIO and MAT 16B, or consent]
- _____ ATM 160/Introduction to Atmospheric Chemistry (4, II) [Prereq: CHE 2B]
- _____ ETX 131/Air Pollutants (3, I) [Prereq: CHE 8B, BIS 102 recommended]
- _____ ETX 138/Legal Toxicology (3, II) [Prereq: ETX 10 or 101 recommended]

Completed

Take 2 classes (6-10 units):

- _____ ERS 136/Chemistry of the Hydrosphere (3, III) [Prereq: CHE 2B, upper div. SSC, HYD, GEL]
*** ERS 136 not offered since 2003 ***
- _____ ERS 144 Trees and Forests (4, I) [Prereq: PLS 2 or BIS 1C or 2C]
- _____ ERS 185/Photo Interpretation & Remote Sensing (4, II) [Prereq: none]
- _____ ERS 186/186L/ Environmental Remote Sensing (5, III) [Prereq: MAT 16B and PHY 7C or 9B]
- _____ ESP 151/Limnology (4, III) [Prereq: BIS 1A, junior standing]
- _____ GEL 35/Rivers of California (3, III) [Prereq: none]
- _____ HYD 134/Aqueous Geochemistry (6, III) [Prereq: CHE 2B]
- _____ HYD 141/Physical Hydrology (4, I) [Prereq: PHY 9B and MAT 21B; HYD 100 recommended]

GIS Remote Sensing (20-23 Units)

Provides conceptual and practical training in the application of remote sensing technology and geographical information systems to natural resource assessment and to monitoring human impacts on the environment. Appropriate training for those seeking employment as GIS specialists with natural resource management agencies or environmental consulting firms.

Completed

Take 20 units (at least 5 classes):

- _____ ERS 185/Aerial Photo Interpretation and Remote Sensing (4, II) [Prereq: none]
- _____ ERS 186/186L/Environmental Remote Sensing (5, III) [Prereq: MAT 16B and PHY 7C or 9B]
- _____ ABT 180/Introduction to Geographic Information Systems (4, I) [Prereq: PLS 21, up div stndng, MAT16B]
- _____ ABT 182/Environmental Analysis with GIS (4, III)
- _____ ABT 181N/Concepts & Methods in Geographic Information Systems (4, II alt. years) [Prereq: ABT 180 or equiv. GIS experience and skills, biology and /or ecology recommended]

Land and Water Management (17-29 Units)

Provides a broad exposure to the chemical, physical, and biological processes that link soils and water to the landscape. Emphasis on environmental interactions that affect soil and water quality in agricultural and non-agricultural settings. Prepares those seeking employment with soil and water resources management agencies and environmental consulting firms.

Completed

Take 2 classes (8-13 units):

SSC 105/Field Studies of Soil Resources (5, summer) [Prereq: SSC 100 and 120 or equiv. rec.]

SSC 109/Nutrient Cycling and Management (4, III) [Prereq: SSC 100 or equiv.]

SSC 111/Soil Microbiology (4, II) [Prereq: CHE 2C and BIS 1 or 2C]

SSC 118/Soils in Land Use and the Environment (4, III) [Prereq: SSC 100 or consent]

SSC 120/Soil Genesis, Morphology and Classification (5, III) [Prereq: SSC 100, GEL 50]

Take 2 classes (6-12 units):

HYD 110/Irrigation Principles & Practices (3, III) [Prereq: PHY 9A; SSC 100 rec.] ***Offered Alt. Years***

HYD 124/Plant-Water-Soil Relationships (4, III) [Prereq: upper div. in SSC, upper div. in PLS or PLB]

HYD 134/Aqueous Geochemistry (6, III) [Prereq: CHE 2B]

HYD 141/Physical Hydrology (3, I) [Prereq: PHY 9B, MAT 21B, ERS 100 rec.]

HYD 143/Hydrological Processes in Ecosystems (3, II) [Prereq: course 141 or ERS 100]

HYD 144/Groundwater Hydrology (3, I) [Prereq: MAT 16B or 21A, HYD 103 rec.]

Take 1 class (3-4 units):

ERS 144/Trees and Forests (4, I) [Prereq: PLS 2 or BIS 1C or 2C]

GEL 35/Rivers [of California] (3, III) [Prereq: none]

GEL 134/Environmental Geology and Land Use Planning (3, II) [Prereq: one course in GEL or consent]

Air (26-28 Units)

Provides direction towards a general understanding of the atmosphere as a finite resource and of environmental problems currently faced by humankind. The option provides a broad understanding of the physical and chemical properties of the atmosphere, including the impacts of air pollution and global climate change. Employment opportunities include positions within federal, state, and county agencies concerned with environmental quality and with private companies.

Note: PHY 7 or 9 series and ATM 60 required for AIR OPTION.

Completed

Take 13 ATM units (at least 4 classes):

ATM 30/Issues in Atmospheric Science (2, II) [Prereq: high school physics] **** not offered since 2007*

ATM 110/Weather Observation and Analysis (4, III) [Prereq: ATM 60]

ATM 116/Climate Change (3, III) [Prereq: none]

ATM 124/Meteorological Instruments and Observations (3, I) [Prereq: ATM 60, PHY 5C]

ATM 133/Biometeorology (4, II) [Prereq: one course in BIS and MAT 16B or consent]

4 units:

ESP 110/Principles of Environmental Science (4, II) [Prereq: PHY 1A or 7A, MAT 16B or 21B, BIS 1A]

Take 2 classes (6-8 units):

ATM 115/Hydroclimatology (3, III) [Prereq: ATM 60] **** not offered since 2002 ****

ATM 149/Air Pollution (4, I) [Prereq: MAT 21D, 22B, CHE 2B, ATM 121A or Engineering 103]

ATM 160/Introduction to Atmospheric Chemistry (4, II) [Prereq: CHE 2B]

ERS 131/Air as a Resource (3, III) [Prereq: CHE 10]

ERS 185/Photo Interpretation & Remote Sensing (4, II) [Prereq: none] ***Offered Alt. Years***

ERS 186/186L/Environmental Remote Sensing (5, III) [Prereq: MAT 16B, PHY 7C or 9B, up div. stand]

GEL 116N/Oceanography (3, II) [Prereq: one of GEL 1, 2 or 50]

Hydrobiology (28-35 Units)

Provides training in the biological aspects of water resources focusing on the understanding and protection of polluted and unpolluted water systems; the structure, function, and principles of aquatic systems. Graduates may seek employment with state and federal agencies such as Water Resources Control Board, Department of Fish and Game, Department of Water Resources, or consulting firms concerned with environmental impacts.

Completed

Take at least 28 units (at least 5 classes):

ENT 116/Biology of Aquatic Insects (3-5, III) [Prereq: ENT 100 or consent of instructor]

ERS 136/Chemistry of the Hydrosphere (3, III) [Prereq: CHE 2B and upper div. in SSC, HYD, or GEL]

*** ERS 136 not offered since 2003 ***

ESP 123/Introduction to Field and Lab Methods in Ecology (4, III) [Prereq: ESP 100, STA 102]

ESP 124/Marine and Coastal Field Ecology (10, summer) [Prereq: upper div. standing or consent]

ESP 151*/Limnology (4, III) [Prereq: BIS 1A and junior standing]

ESP 155*/Wetland Ecology (4, I) [Prereq: ESP 100 or PLS 117, ESP 110 or 151 recommended]

ETX 101/Principles of Environmental Toxicology (4, I) [Prereq: CHE 8B, 118B, or 128B and BIS 1A]

GEL 35/Rivers [of California] (3, III) [Prereq: none]

GEL 116N/Oceanography (3, II) [Prereq: one of GEL 1, 2 or 50]

GEL 139/Fluvial Geomorphology (5, II) [Prereq: GEL 50, 50L, MAT 21B or 16B rec.]

*** GEL 139 not offered since 2006 ***

HYD 134/Aqueous Geochemistry (6, III) [Prereq: CHE 2B]

HYD 141/Physical Hydrology (4, I) [Prereq: PHY 9B, MAT 21B, ERS 100 rec.]

PLB 118/Intro to Phycology and Bryology (5, II) [Prereq: BIS 1A and 1C, or 2A, 2B, and 2C]

PLS 178/Biology and Management of Fresh Water Macrophytes (3, I) [Prereq: BIS 1A, 1B, 1C, CHE 8B]

WFC 120+120L/Biology and Conservation of Fishes (4, I) [Prereq: BIS 1B]

WFC 153/Wildlife Ecotoxicology (4, II) [Prereq: intro course in Organic Chemistry, Ecology, and Physiology, or consent]

*note: Associated lab courses
are strongly recommended.
For example, 151L and 155L.

Plant-Environmental Interactions (22-28 Units)

Provides background in plant functioning and allows integration of biological and environmental science to provide understanding of natural and managed ecosystems.

Completed

Take at least 22 units (at least 6 classes):

ATM 133/Biometeorology (4, II) [Prereq: one course in BIS and MAT 16B or consent]

ERS 144/Trees and Forests (4, I) [Prereq: PLS 2 or BIS 1C or 2C]

ESP 123/Intro to Field and Lab Methods in Ecology (4, III) [Prereq: ESP 100, STA 102]

ESP 155/Wetland Ecology (4, I) [Prereq: ESP 100 or PLB 117, ESP 110 or 151 recommended]

ESP 155L/Wetland Ecology Laboratory (3, I) [Prereq: must take concurrently with ESP 155]

HYD 124/Plant-Water-Soil Relationships (4, III) [Prereq: upper div. in SSC, upper div. in PLS or PLB]

PLB 111/Plant Physiology (3, I) [Prereq: BIS 1C, or 2A, 2B, and 2C; CHE 8B and PHY 7C]

PLB 111D/Problems in Plant Physiology (1, I) [Prereq: PLB 111 concurrently]

PLB 112/Plant Growth and Development (3, II) [Prereq: BIS 1C, or 2A, 2B, and 2C; CHE 8B]

PLB 112D/Problems in Plant Growth and Development (1, II) [Prereq: PLB 112 concurrently]

PLB 117/Plant Ecology (4, I) [Prereq: BIS 1A, 1B, 1C, or 2A, 2B, 2C]

PLS 141/Principles and Methods of Ethnobotany (4, II) [Prereq: BIS 1C or PLS 2 or equiv; 108 recom]

PLB 142/Ecology of Crop Systems (4, II) [Prereq: BIS 1C or PLS 2; MAT 16A or PHY 1A, or consent]

PLS 157/Physiology of Environmental Stresses in Plants (4, II) [Prereq: PLB 112 or equiv.]

PLS 158/Mineral Nutrition of Plants (4, III) [Prereq: PLB 111 or equiv.]

PLS 130/Rangeland Ecology (3, II) [Prereq: BIS 1C; intro ecology course and junior standing recom.]

PLS 131/Identification and Ecology of Grasses (2, III) [Prereq: BIS 1C or PLS 2, PLB 102 recom.]

SSC 109/Nutrient Cycling and Management (5, III) [Prereq: SSC 100 or equiv.]

SSC 111/Soil Microbiology (4, II) [Prereq: CHE 2C and BIS 1 or 2C]

SSC 112/Soil Ecology (3, I) [Prereq: 1B, 1C, SCC 100] *** not offered since 2006 ***

GENERAL EDUCATION (24 UNITS)

3 Arts and Humanities Courses

3 Social Sciences Courses

3 Writing Courses

Diversity Course:

--

IGETC

(GE completed at Community College)

After satisfaction of above university requirement, additional units in social sciences or humanities courses to total 24 units.

UNRESTRICTED ELECTIVES (16-50 UNITS)

Total Units Completed _____

Total Upper Division _____

Total Units Outstanding _____

UNIT REQUIREMENTS

	Total Upper Div Units	Total Units
UNIVERSITY AND COLLEGE REQUIREMENTS (0-8)	_____	_____
PREPARATORY SUBJECT MATTER (53-69)	_____	_____
DEPTH SUBJECT MATTER (27-33)	_____	_____
GENERAL EDUCATION (24)	_____	_____
SPECIALIZATION (0-35)	_____	_____
UNRESTRICTED ELECTIVES (11-66)	_____	_____
TOTAL UNITS FOR THE DEGREE	<u>54</u>	<u>180</u>
UNITS OUTSTANDING	_____	_____

Abbreviations:

AAS African American Studies	ECS Engineering Computer Science	NAC Nature and Culture
ABT Applied Biological Systems Technology	ENG Engineering	NAS Native American Studies
AMR Agricultural Management and Rangeland Resources	ENL English	POL Political Science
ASA Asian American Studies	ENT Entomology	PHY Physics
ARE Agricultural and Resource Economics	ERS Environmental and Resource Sciences	PLB Plant Biology
ATM Atmospheric Science	ESP Environmental Science and Policy	PLS Plant Sciences
BIS Biological Sciences	ETX Environmental Toxicology	SSC Soil Science
CHE Chemistry	EVE Evolution and Ecology	STA Statistics
CMN Communications	GEL Geology	WFC Wildlife, Fish and Conservation Biology
COM Comparative Literature	HIS History	
ECN Economics	HYD Hydrology	
	LDA Landscape Architecture	
	MAT Mathematics	