

Millikin University
Student Learning in the Environmental Studies Major

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Executive Summary

The learning goals for Environmental Studies majors are that all students earning this degree will:

- 1) Develop a deeper understanding of the complex connections between environmental issues and their social, political, economic, scientific, and ethical underpinnings (MU Prepares 2 and 3)
- 2) Develop the critical thinking skills necessary to comprehend environmental issues (MU Prepares 2 and 3)
- 3) Prepare for professional success by engaging in performance learning through a senior capstone project in conjunction with either an internship or research experience (MU Prepares 1)

To measure individual student learning with respect to these goals, the Environmental Studies Coordinator, with the help of the Environmental Studies Committee, will assess graduating students in the program annually, using feedback from assessments at each level to guide programmatic improvement. Assessment methods, when applicable, will involve detailed scaled rubric sheets to evaluate chosen artifacts that measure learning goals.

For the 2017-2018 academic year, we rated student learning in each of these areas as located somewhere between red, yellow and green. We examine accumulated data for trends that assist us in deciding on necessary programmatic changes, as needed. Programmatic assessment methods include comparisons of pre/post-test scores for self-reflection surveys, grades for the "core and concentration" courses, and the average grade on the capstone professional paper.

As data is collected over time and trends become apparent, we close the loop of assessment by refining our curriculum and our teaching methodology in this major to better assist students in achieving success in mastering the designated learning goals and obtaining their degrees.

The Environmental Studies major continues to be strengthened through analysis of this assessment data and curricular adjustments discussed and approved by the Environmental Studies Committee and the Dean of the College of Arts and Sciences.

Goals and Mission of the Environmental Studies Major

The global environment influences every person on Earth every day and is currently facing unprecedented changes because of environmental issues such as human overpopulation, habitat loss, and pollution. Moreover, significant global issues are intimately tied to our relationship with the environment. Global solutions to poverty are rooted in the acquisition and distribution of natural resources, which are in turn, dependent on sustainable use of the environment. Solutions will require an interdisciplinary knowledge of fields such as political science, economics, philosophy, sociology, communications, and science.

The Environmental Studies major is an interdisciplinary major that will stimulate informed democratic citizenship in a global environment and enhance one's knowledge of the complex and dynamic relationship between humans and the natural world. Graduates of this program will be prepared to implement solutions to these environmental issues through a variety of career opportunities in government, law, tourism, business, social services, education, public relations and others.

Learning Outcome Goals

All Environmental Studies majors will:

- 1) Develop a deeper understanding of the complex connections between environmental issues and their social, political, economic, scientific, and ethical underpinnings (MU Prepares 2 and 3)
- 2) Develop the critical thinking skills necessary to comprehend environmental issues (MU Prepares 2 and 3)
- 3) Prepare for professional success by engaging in performance learning through a senior capstone project in conjunction with either an internship or research experience (MU Prepares 1)

Snapshot

In a world where citizens and their governments, businesses and nonprofit organizations are becoming more environmentally aware, our students see the advantage of increasing their knowledge and skills in Environmental Studies. Therefore, in Fall 2011, Millikin University added an Environmental Studies Minor to its curriculum. After five years, 17 students graduated with the minor. In addition, seven out of our ten peer institutions and eight out of our ten aspiration institutions have either an environmental studies or environmental science program that includes a major and minor.

Therefore, the Environmental Studies major was added to the Millikin University curriculum in the Fall of 2016. The major and minor, taken together, represent the Environmental Studies program. The program consists of a Coordinator and an advisory Environmental Studies committee. The program had its first major graduate in May of 2018.

Faculty/Teaching Environments

Since the Environmental Studies major is interdisciplinary, the faculty that teach courses for the major are found in departments from all across the university. Therefore, almost all faculty for the major have Ph.D.s in their specialties. In addition, courses are taught in a variety of buildings across campus depending on the instructional needs of the particular course.

Cohort History and Class Size

The number of students in the Environmental Studies major has increased over time (see Table 1). These students consist of incoming freshmen, transfer students and students that change majors between semesters.

Table 1. Total Count of Majors

	Fall 2016	Spring 2017	Fall 2017	Spring 2018
EV Majors	4	4	7	9

Courses Taught

The curriculum has a “core” component for all majors and then has been further divided into two concentrations; the Environmental Policy Concentration and the Natural Resources Concentration (see Appendix A). These concentrations allow students to focus on a path that could prepare them for environmental careers such as an environmental policy analyst, environmental lobbyist, conservation officer, park interpreter, environmental educator, environmental consultant or perhaps graduate work to pursue a career in environmental law.

The Learning Story

The Environmental Studies major experience includes a combination of “core/supporting” courses required of all majors and then two possible concentrations based on the student’s future career path. The core/supporting courses provide a sense of a learning community for the majors, since they often take these courses during the same semester.

The core courses include “Introduction to Environmental Studies” which provides an overview of the major and allows students to explore their career options. Also, this course particularly provides a sense of a learning community since the small classroom size gives the majors a place to get to know each other. Other core courses provide the student opportunities to understand environmental ethics and current environmental issues, both locally and globally. Finally, the culminating core courses provide their “performance learning” experience which can be either an internship experience or a research experience. This performance learning experience is shared with others through their Environmental Capstone course.

The supporting courses provide opportunities for understanding economics, politics, and communication in the business world; skills that are important for any environmental career. The student then chooses to emphasize either the Environmental Policy or Natural Resources concentration courses based on their career path. Both of these concentrations provide opportunities to further “fine-tune” the student’s knowledge and skills in a particular area.

Just as the curriculum helps the students actualize their plans of study, so too does the advising process. Advising is accomplished through regular meetings and communications with an academic advisor. During these meetings, students can discuss career plans, challenges they may be having or schedule courses through the use of a carefully crafted Advising Worksheet that clearly indicates when and what courses need to be taken for graduation (see Appendix B).

Curriculum Map

Courses listed below each goal provide information and experiences necessary for students to complete the departmental goals in a timely manner during their four years at Millikin.

Academic Year	Goal #1	Goal #2	Goal #3
Freshman	EV110: Intro. to Environmental Studies	Environmental Studies Core and Concentration courses (See Appendix A)	
Sophomore	Expanded in all other courses taken	Environmental Studies Core and Concentration courses (See Appendix A)	
Junior	Expanded in all other courses taken	Environmental Studies Core and Concentration courses (See Appendix A)	EV391/392 or EV370/371: Environmental Studies Research or Internship
Senior	Expanded in all other courses taken EV481: Environmental Studies Capstone	Environmental Studies Core and Concentration courses (See Appendix A)	EV391/392 or EV370/371: Environmental Studies Research or Internship EV481: Environmental Studies Capstone

Assessment Methods

Each year, as data is collected and trends become apparent, the loop of assessment will be closed by refining the curriculum and teaching methodology in the major to assist students in achieving success in mastering our designated program learning goals. The academic advisor keeps a record of student grades and artifacts are collected and stored in "G" share.

The learning goals for the major are assessed in the following ways:

Goal 1) Develop a deeper understanding of the complex connections between environmental issues and their social, political, economic, scientific, and ethical underpinnings is assessed through comparison of self-reflections given at the beginning of the major in Introduction to Environmental Studies and at the end of the major in Environmental Studies Capstone. (See Appendix C for New Ecological Paradigm Self-Reflection Survey)

Goal 2) Develop the critical thinking skills necessary to comprehend environmental issues is assessed and achieved in Environmental Studies Core and Concentration courses through earning at least a C- for the course. (See Appendix A for list of courses)

Goal 3) Prepare for professional success by engaging in performance learning through a senior capstone project in conjunction with either an internship or research experience is assessed through formal evaluation by at least one faculty member and the Environmental Studies Coordinator. (See Appendix D for Capstone Professional Paper Rubric)

- GREEN –
 - Goal 1) Improvement between the self-reflection pre-test (given in Intro. to Env. Studies) and post-test scores (given in Env. Capstone) as indicated by an average of 8/15 answers in the “positive” direction based on the learning goal.
 - Goal 2) Completion of required courses in the “core and concentration” courses, with a C- or better, and less than 5% must repeat courses to achieve this goal.
 - Goal 3) At the completion of the Environmental Studies Capstone, at least an average of a B for the Professional Paper.

- YELLOW –
 - Goal 1) No change between the self-reflection pre-test (given in Intro. to Env. Studies) and post-test scores (given in Env. Capstone) as indicated by an average of 8/15 answers in the “neutral” direction based on the learning goal.
 - Goal 2) Completion of required courses in the “core and concentration” courses, with a C- or better, but between 5% and 15% must repeat courses to achieve this goal.
 - Goal 3) At the completion of the Environmental Studies Capstone, an average between a C- and B- for the Professional Paper.

- RED –
 - Goal 1) Diminishment between the self-reflection pre-test (given in Intro. to Env. Studies) and post-test scores (given in Env. Capstone) as indicated by an average of 8/15 answers in the “negative” direction based on the learning goal.
 - Goal 2) Completion of required courses in the “core and concentration” courses, with a C- or better, but greater than 15% must repeat courses to achieve this goal.
 - Goal 3) At the completion of the Environmental Studies Capstone, an average of less than a C- for the Professional Paper.

Assessment Data

One Environmental Studies major graduated in the 2017-2018 academic year. This student was assessed below in order to obtain this year’s data points.

GOAL	DATA	ASSESSMENT CATEGORY
1	8/15 positive trend	GREEN
2	Complete with >C- and no repeated courses	GREEN
3	Average = A	GREEN

Analysis of Assessment Results

The Environmental Studies major program indicators for our one graduating student had no “yellow” or “red” category scores. All scores were in the “green” category, demonstrating good results in programmatic achievement of our learning goals.

Goal 1) Develop a deeper understanding of the complex connections between environmental issues and their social, political, economic, scientific, and ethical underpinnings is assessed through comparison of self-reflections given at the beginning of the major in Introduction to Environmental Studies and at the end of the major in Environmental Studies Capstone.

Every Environmental Studies major is given a self-reflection survey when they take the Intro. to Environmental Studies course. This course is taken in the spring semester of their first year at Millikin. The same survey is given again in the Environmental Studies capstone, during the student's last semester. The pre-test and post-test scores are compared to determine if the student's attitude, and therefore, understanding of the environmental issues has become more positive, neutral or negative. A majority of at least eight out of fifteen questions determines the trend.

This year the student scored 8/15 in the "positive" direction based on the learning goal therefore placing them in the green category.

Goal 2) Develop the critical thinking skills necessary to comprehend environmental issues is assessed and achieved in Environmental Studies Core and Concentration courses through earning at least a C- for the course.

Earning a C-, in the Environmental Studies Core and Concentration courses, is considered adequate for developing the critical thinking skills necessary to comprehend environmental issues. Also, it is preferred that the student has minimal "repeats" to get the required C-. The student's grades are recorded each semester by the academic advisor.

This year the student earned greater than a C- in all Environmental Studies Core and Concentration courses, with no repeat courses, therefore placing them in the green category.

Goal 3) Prepare for professional success by engaging in performance learning through a senior capstone project in conjunction with either an internship or research experience is assessed through formal evaluation by at least one faculty member and the Environmental Studies Coordinator.

Every Environmental Studies major, during their junior or senior year, completes a performance learning experience, to help prepare them for professional success, by either being an intern or completing a research project. This experience is supervised by a faculty member and the student must earn at least a C- (this is a "core" course).

Additionally, the experience is formally evaluated during the Environmental Capstone course by a faculty member and the Environmental Studies Coordinator. During the capstone course, the student writes a professional paper evaluating their experience and completes a presentation of their experience for the Introduction to Environmental Studies course. The professional paper is graded by a faculty member and the Environmental Studies Coordinator and an average is taken of the two scores.

This year the student earned an average of an A for the Environmental Capstone Professional Paper therefore placing them in the green category.

Improvement Plans

Annual assessment reports, with ongoing trends, for the Environmental Studies major will be shared with the Environmental Studies Committee. This advisory committee will examine these reports and, if trends indicate that changes are required for program improvement, then recommendations will be made to the faculty who teach courses for the major.

Based on the analysis of assessment results, at this time, there appears to be no need to make any program changes. But, we realize that there is only one year worth of data and as the program continues in the future, we will carefully follow the trends.

Program challenges

Since the Environmental Studies major is an interdisciplinary major, there needs to be ongoing refinement of the major's curriculum as university courses are added and deleted. For example, for the 2018/2019 school year, based on an evaluation by the Environmental Studies Committee, two courses were added to the Environmental Policy Concentration; HI206: Cultural Geography and SO120: Intro. to Anthropology.

Additionally, at this time, the Environmental Studies Coordinator is advising all majors, but as the program grows, we need to consider distribution of advisees amongst other faculty on the Environmental Studies Committee.

APPENDIX A: Environmental Studies Major (Core and Concentration Courses)

Core Courses (required and earn a grade of C- or above):

EV110. Introduction to Environmental Studies (1)
EV130. Environmental Biology (4)
EV251. Creating a Green Society in the U.S. (3)
EV252. Environmental Ethics (3)
EV350. Global Environmentalism (3)
EV370, EV371. Environmental Studies Internship (1-4) **OR** EV391, EV392. Environmental Studies Research (1-2)
EV481. Environmental Studies Capstone (1)

Concentration Courses (required and earn a grade of C- or above):

Choose at least 6 courses, with at least 4 @ 300 level:
(4 courses from one concentration and 2 courses from the other concentration)

Environmental Policy Concentration

CO251. Introduction to Public Relations (3) (pre-req. = CO101 or consent of instructor)
CO306. The Discourse of Environmental Advocacy (3)
CO306. The Discourse of Environmental Documentary (3)
CO310. Small Group Communication (3) (pre-req. = CO101 or consent of instructor)
CO343. Communication and Conflict (3)
HI206. Cultural Geography (3)
PO221. Introduction to International Relations (3)
PO235. Introduction to the Criminal Justice System (3)
SO120. Introduction to Anthropology (3)
SO201. Statistical Methods in the Behavioral Sciences (3) (pre-req. = PS130 or SO100)
SO330. Sociology of Gender (3) (pre-req. = SO100)
SO390. Environmental Sociology (3)
SO365. Sociology of Globalization (3)

Natural Resources Concentration

BI125. Local Flora (4)
BI220. Field Ecology (4)
BI280. Ecological Journeys (4)
BI314. Ecology (4) (pre-req. = BI105/155 and BI108/158 or consent of instructor)
BI325. Vertebrate Biology (4) (pre-req. = BI108/158 or consent of instructor)
BI326. Plant Biology (4) (pre-req. = BI108/158 or consent of instructor)
BI340. Conservation Biology (4) (pre-req. = BI105/155 or BI108/158 or BI130 or consent of instructor)
CH106. Elemental Geosystems (3)
ES321/IN251. Health and Pollution (3)
MA130. Elementary Probability and Statistics with Spreadsheets (4) **OR** BI240. Analysis of Biological Data (4)
PH223. Scientific Revolutions: History and Philosophy of Science (3)

APPENDIX B: Environmental Studies Major: Advising Worksheet

Advising Checklist for BS Environmental Studies Majors

NAME:

YEAR ENROLLED:

ADVISOR:

CAREER INTEREST:

To successfully graduate from Millikin University, a student must complete 124 credit hours, distributed among University Requirements, College requirements, and Major requirements. Of these 124 credits, 39 must be in courses numbered 300 or above.

Sequential University Requirements for MPSL

Course	Credits	Recommended for	Course/Semester Taken
University Seminar, IN140	3	Year 1, Semester 1	
Critical Reading & Writing I	3	Year 1, Semester 1	
Critical Reading & Writing II	3	Year 1, Semester 2	
IN250 US Studies Culture	3	Year 2	
IN251 US Studies Social Structures	3	Year 2	
IN350 Global Studies	3	Year 3	
Total	18		

Non-Sequential University Requirements for MPSL

Course	Credits	Recommended for	Course/Semester Taken
CO200 Oral Communication	3	Years 1-2	
Creative Arts	3	Years 1-3	
ICS 1*	3-4	Years 1-3	
ICS 2*	3-4	Years 1-3	
Natural Science w/ lab	4	Years 1-3	
Quantitative Reasoning	3	Years 1-4	
Total	19-21		

Non-Sequential Bachelor of Science Requirements, 10 credits (from no more than two departments)

Course	Credits	Recommended for	Course/Semester Taken
Additional Natural Science w/ lab	4	Years 1-3	
Science or Math	3-4	Years 1-3	
Science or Math	3-4	Years 1-3	
Total	10-12		

Choose ten additional credits from BI; CH; MA; CS; AS; PY from no more than two departments that includes a lab in a natural science.

College of Arts and Science Distribution Requirements

Literature	3	Years 1-4	
Historical Studies	3	Years 1-4	
Total	6		

List courses numbered 300 or above. Graduates must have 39 credits at 300-400 level for graduation.

OPTIONAL MINOR COURSES (21 CREDITS)

Environmental Studies Majors Core—Must earn a C- or above for EV courses

Requirement	Course #	Course title	Credit	Semester taken
Core	EV 110	Intro. To Environmental Studies	1	
Core	EV130	Environmental Biology	4	
Core	PO105	The American Political System	3	
Core	EC120	Principles of Economics (pre-req. = at least MA109)	3	
Core	EN210/BU250	Business and Professional Writing/Written Business Communication (pre-req. = IN151)	3	
Core	EV251/IN251	Creating a Green Society in the U.S.	3	
Core	PH219	Environmental Ethics	3	
Core	EV350/IN350	Global Environmentalism	3	
Core	EV481	Environmental Studies Capstone	1	

Environmental Studies Majors Core Option: Internship or Research – CHOOSE ONE

Requirement	Course #	Course title	Credit	Semester taken
Core Internship	EV370/371	Environmental Studies Internship	1-3	
Core Research	EV391/392	Environmental Studies Research	1-3	

Environmental Studies Major Concentration—Must earn a C- or above

Choose 4 courses from One Concentration, 2 Courses from Other Concentration *Need at least 4 at 300 level

Requirement	Course #	Course title	Credit	Semester taken
Concentration 1				
Concentration 1				
Concentration 1				
Concentration 1				

Requirement	Course #	Course title	Credit	Semester taken
Concentration 1				
Concentration 1				
Concentration 1				
Concentration 1				

Requirement	Course #	Course title	Credit	Semester taken
Concentration 2				
Concentration 2				

<p>Environmental Policy Concentration CO251. Introduction to Public Relations (3) CO306. The Discourse of Environmental Advocacy (3) CO306. The Discourse of Environmental Documentary (3) CO310. Small Group Communication (3) CO343. Communication and Conflict (3) HI206. Cultural Geography (3) PO221. Introduction to International Relations (3) PO235. Introduction to the Criminal Justice System (3) SO120. Introduction to Anthropology (3) SO201. Statistical Methods in the Behavioral Sciences (3) SO330. Sociology of Gender (3) SO390. Environmental Sociology (3) SO365. Sociology of Globalization (3)</p>	<p>Natural Resources Concentration BI125. Local Flora (4) BI220. Field Ecology (4) BI280. Ecological Journeys (4) BI314. Ecology (4) BI325. Vertebrate Biology (4) BI326. Plant Biology (4) BI340. Conservation Biology (4) CH106. Elemental Geosystems (3) ES321/IN251. Health and Pollution (3) MA130. Elementary Probability and Statistics OR BI240. Analysis of Biological Data (4) PH223. Scientific Revolutions: History and Philosophy of Science (3)</p>
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Non-program Electives

_____ **Current Total Credits/INCLUDING CURRENT SEMESTER!!**. **Must have 124 credits to graduate**

APPENDIX C: Environmental Studies Major Self-Reflection thru the New Ecological Paradigm Scale

New Ecological Paradigm Scale

Name _____

Listed below are statements about the relationship between humans and the environment. Please indicate the degree to which you agree with each item. Choose the number of your response for each statement using the following scale: 5 = STRONGLY AGREE, 4 = MILDLY AGREE, 3 = UNSURE, 2 = MILDLY DISAGREE, OR 1 = STRONGLY DISAGREE.

1. We are approaching the limit of the number of people the earth can support.

1 2 3 4 5

2. Humans have the right to modify the natural environment to suit their needs.

1 2 3 4 5

3. When humans interfere with nature, it often produces disastrous consequences.

1 2 3 4 5

4. Human ingenuity will insure that we do not make the earth unlivable.

1 2 3 4 5

5. Humans are severely abusing the earth.

1 2 3 4 5

6. The earth has plenty of natural resources if we just learn how to develop them.

1 2 3 4 5

7. Plants and animals have as much right as humans to exist.

1 2 3 4 5

8. The balance of nature is strong enough to cope with the impacts of modern industrial nations.
- 1 2 3 4 5
9. Despite our special abilities, humans are still subject to the laws of nature.
- 1 2 3 4 5
10. The so-called "ecological crisis" facing humankind has been greatly exaggerated.
- 1 2 3 4 5
11. The earth is like a spaceship with very limited room and resources.
- 1 2 3 4 5
12. Humans were meant to rule over the rest of nature.
- 1 2 3 4 5
13. The balance of nature is very delicate and easily upset.
- 1 2 3 4 5
14. Humans will eventually learn enough about how nature works to be able to control it.
- 1 2 3 4 5
15. If things continue on their present course, we will soon experience a major environmental catastrophe.
- 1 2 3 4 5

Source: Dunlap, R. E., Van Liere, K. D., Mertig, A. G., & Jones, R. E. (2000). Measuring endorsement of the New Ecological Paradigm: A revised NEP scale. *Journal of Social Issues*, 56, 425-442

APPENDIX D: Environmental Studies Major Capstone Professional Paper Rubric

**EV481: Environmental Studies Capstone
Professional Paper: 150 points possible**

1. Understanding of the Importance of the Environmental Topic to the Global Community (60 pts.)

Excellent	Adequate	Nominal
Demonstrates a clear understanding of the environmental topic and its importance globally. Opinions are analyzed and supported.	Demonstrates some understanding of the environmental topic and its importance globally. Opinions are stated with some analysis and support.	Demonstrates a limited understanding of the environmental topic and its importance globally. Opinions are stated with limited analysis or support.

2. Understanding of the Importance of the Environmental Topic to the Local Community (30 pts)

Excellent	Adequate	Nominal
Demonstrates a clear understanding of a personal sense of responsibility to the local community.	Demonstrates some understanding of a personal sense of responsibility to the local community.	Demonstrates a limited understanding of a personal sense of responsibility to the local community.

3. Understanding of the Relationship between Student's Behavior and the Environmental Topic (30 pts.)

Excellent	Adequate	Nominal
Expresses a strong connection between the environmental topic and self. Demonstrates strong empathy and change in attitudes, perspectives, or behavior.	Expresses some connection between the environmental topic and self. Demonstrates some empathy and change in attitudes, perspectives, or behavior.	Expresses a limited connection between the environmental topic and self. Demonstrates limited empathy and little or no change in attitudes, perspectives, or behavior.

4. Organization (15 points)

Excellent	Adequate	Nominal
Organization is clear; transitions between ideas enhance essay. Has a well-defined introduction, body and conclusion.	Basic organization is apparent; transitions connect ideas, although they may be mechanical. Has introduction, body and conclusion, one of which may be weak.	Work is unfocused and poorly organized; lacks logical connection of ideas. Has poorly written introduction, body and conclusion.

5. Mechanics (15 points)

Excellent	Adequate	Nominal
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Has very few grammar, spelling and punctuation errors. MLA style correctly used.	Has some grammar, spelling and punctuation errors. MLA style used but may have errors.	Has many grammar, spelling and punctuation errors. MLA style not used or with many errors.
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