# ECOLOGY SYLLABUS

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| Course No.: | **SCN 130** |
| Course Title: | Ecology |
| Credits: | 4 |
| Prerequisites: | None |


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| Faculty: | Laurence E. Heglar, PhD. |
| Office Location: | CIS |
| Telephone: | 676.406.071 |
| E-Mail: | LHEGLAR@schillermadrid.edu |
| Office Hours: | By Appointment |
| Web Page: | http://www.institutobios.org/courses/ |


**Principles of Ecology - BIO 130**

Examines the interrelationships of organisms and their environments. The broad subject of ecology focuses upon the interactions of plants and animals, including humans, with each other and with their non-living world. Three levels of ecology are studied: (1) Individuals, (2) Populations, (3) Communities and Ecosystems. This class provides an overview of the science of ecology for the informed citizen, and also a good foundation for further work in ecology, marine biology and environmental science. Class, three hours; lab, two hours per week. (4 credits)

**Course Objectives:**
At the completion of this course the student should be able to:

1. Understand basic principles of ecology
2. Practice laboratory and field techniques in ecology
3. Have an appreciation for and ability to critically think about ecological issues presented by the media
4. Apply ecological principles to examine environmental problems such as human population growth, pollution, and loss of biodiversity
5. Develop communication skills (oral and written) in expressing views on ecological issues.

**Evaluation Methods**
Midterm exam: 30%
Final exam: 30%
Lab Reports: 40%

**Attendance Policy:**
Attendance is expected at every class and extra lab fieldtrips. Attendance will be taken every class. For every two classes missed, the penalty is the loss of a half of a grade point (e.g., A to A-, A- to B+, B+ to B, B to B-, B- to C+ etc.).
**Note:** Students who arrive late may be counted absent. However, if a student arrives late and class has begun, it is better to enter the class so as not to miss important material. Also, students should not leave class without asking permission. Any student doing so will be counted absent.

**Academic Honesty:**
Students are expected to abide by the academic honesty policy of Endicott College. Students shall exhibit honesty in all academic endeavors, cheating in any form is not tolerated, nor is helping someone to cheat. Work submitted is taken as a guarantee that it is the student's own, except where properly credited to another. Violations include giving or receiving aid on an exam, report or project where otherwise prohibited, fraud, plagiarism or forgery of any record, or any deceptive act in connection with academic work. Any breach of the academic honesty policy will result in the failure of the assignment. Two breaches will result in dismissal and failure of the class.

**Required Readings:**
Miller, G.T. (2006) Living in the Environment (15th ed.). Pacific Grove, CA., Brooks/Cole.

**Recommended Readings:**
There will be additional readings assigned throughout the course.

**Supportive web sites**:
As part of your assignment on certain days, you should use the link on the Course Syllabus to peruse the selected web site pertaining to the day's topic.

# READING AND TOPIC SCHEDULE

*Your instructor reserves the right to change the readings according to new and interesting topics discovered by students and instructor alike. Students are responsible for text material regardless of whether or not it is discussed in class. Exams will cover material covered in both lecture and text.*

*Students should consider the internet links listed below to be required reading.*

| DATE | TOPIC | READING |
|---|---|---|

## Week 1

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| May 21 | Environmental Problems and Their Causes | Text, Ch. 1 - *Environmental Problems, Their Causes and Sustainability* |
| May 22 | Environmental Problems and Their Causes | Video: *An Inconvenient Truth* |
| May 23 | Human Evolution | Online Video: Becoming Human Documentary and Origins of Humankind Website |
| May 24 | Human History | Text, Ch. 2 - *Critical Thinking: Science, Models and Systems*<br>*Regulative Principles* |
| *May 26* | *Field trip to Natural Science Museum* | *Lab 1 - Human Evolution*<br>*Lab 2 - The Concept of Species* |

## Week 2

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|---|---|---|
| May 28 | Ecology, Ecosystems, & Food Webs | Text, Ch. 4 - *Ecology, Ecosystems, & Food Webs* |
| May 29 | Ecology, Ecosystems, & Food Webs | Text, Ch. 4 - *Ecology, Ecosystems, & Food Webs* |
| May 30 | Evolution & Biodiversity | Text, Ch. 6 - *Evolution & Biodiversity* |
| May 31 | Evolution & Biodiversity | Text, Ch. 6 - *Evolution & Biodiversity* |
| *June 1* | *Field trip to Retiro* | |
| *Lab 3 - Observation and Hypothesis Testing* | | |

## Week 3

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|---|---|---|
| June 4 | Climates and Biomes | Text, Ch. 7 - *Geographical Ecology: Climate and biomes* |
| June 5 | Climates and Biomes | Text, Ch. 7 - *Geographical Ecology: Climate and biomes* |
| June 6 | Aquatic Ecology | Text, Ch. 8 - *Aquatic Ecology* |
| June 7 | Aquatic Ecology | Text, Ch. 8 - *Aquatic Ecology* |
| June 8 | **Midterm exam** | |

## Week 4

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|---|---|---|
| June 11 | Communities | Text, Ch. 9 - *Community Processes: Species Interaction and Succession* |
| June 12 | Communities | Text, Ch. 9 - *Community Processes: Species Interaction and Succession* |
| June 13 | Population Dynamics | Text, Ch. 10 - *Population Dynamics, Carrying Capacity and Conservation Biology* |
| June 14 | Population Dynamics | Text, Ch. 10 - *Population Dynamics, Carrying Capacity and Conservation Biology* |
| June 15 | Lab 4 - Natural Selection | *To be held at CIS* |

**Week 5**

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|---|---|---|
| June 18 | Human Population Growth | Text, Ch. 11 - *Human Population Growth: Growth, Demography and Carrying Capacity*<br>World Population: Major Trends & Population Pyramids by country |
| June 19 | Human Population Growth | Text, Ch. 11 - *Human Population Growth: Growth, Demography and Carrying Capacity* |
| June 20 | Renewable Energy Resources | Text, Ch. 16 - *Energy Efficiency and Renewable Energy Resources* |
| June 21 | Renewable Energy Resources | Text, Ch. 16 - *Energy Efficiency and Renewable Energy Resources* |
| June 22 | **Final Exam** | |

# LAB REPORTS AND SCHEDULE

**Lab Evaluation:** The evaluation for each lab will be specified with each lab handout.

**Lab Reports:** Lab reports will be written for some of the labs that we do in this class. Details for how to write a lab report will be handed out for each lab. There will be a lab report or two every week.

**Required Materials:** There will be no additional textbook for the lab. Laboratory handouts will be provided when needed. You are responsible for providing a ring binder to keep all your lab handouts and lab reports in. Lab binders will be collected periodically. In additional to the binder you should obtain a small bound notebook to take notes in during labs.

**Absences:** Lab sessions will be held outside of regular class hours, often on Fridays. Both sections of the course will neet together for the labs. If you have a conflict, let me know as soon as you can (one week prior to lab). Making up labs is difficult and not always feasible. A note or phone call from a doctor or parent will be needed to make up a lab, and even with a note, a different or modified version of the lab may be all that can be done.

YOUR LAB REPORT SHOULD BE WRITTEN BY YOU. Even though you may work with someone else, your lab reports should be different. If they are identical, you will not get credit.

**Tentative Ecology Lab Schedule**

DATE TOPIC

| | | |
|---|---|---|
| May 25 | Lab 1: Evolution<br>Lab 2: The Concept of Species<br>Field Trip to the Natural Sciences Museum | Human Evolution (Word .doc) |
| June 1 | Lab 3: Observation & Hypothesis Testing<br>Field Trip to Retiro Park | |
| June 15 | Lab 4: Natural Selection Game<br>Lab 5: | |

## Internet Resources

There are two sets of Internet Resources relevant to this course that you should be aware of. The first is the website for the textbook, G.T. Miller's *Living in the Environment, 15th ed.* The site has study aids such as practice quizes and flash cards for each chapter in the text, as well as hyperlinks to chapter-related topics. Doing the chapter quizes on the website will help you on the midterm and final exams I give in class, and I may make specific assigments from time to time from the exercises there.
The second site is the Life-Sciences/Environment Research Page on the instructor's personal website which has dozens of links to all sorts of environment-related topics.