

Syllabus for Biology 360

Ecology

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Office Hours: MWF 9:00-10:00 AM and by appointment

Classrooms: Lecture - 330 PPHAC; MWF 11:45 AM-12:35 PM
Lab –300 Collier; F 1:15 PM-4:15 PM

Course Description: Ecology is the scientific study of the relationships of organisms to their environment and to each other. Broad in scope and evolutionary in perspective, ecology attempts to understand the reasons for the abundance and distribution of organisms, the flows and cycles of energy and matter in ecosystems, the intra- and interspecific relationships between organisms, and the structure and functions of communities.

Course Objectives: Upon completion of this course students will be able to demonstrate:

- 1) a knowledge of basic concepts in ecology, including understanding the dynamic nature of ecological processes and the importance of variation in space and time
- 2) an ability to make a scientific argument & support it with appropriate examples or scientific justification
- 3) a knowledge of and ability to apply the scientific process
- 4) an ability to find, evaluate, & use published scientific information
- 5) an ability to objectively analyze and interpret data
- 6) a competence in scientific writing and oral communication
- 7) an ability to work together in teams
- 8) an ability to integrate concepts within and among scientific disciplines
- 9) the relevance of ecology to society

Grading: The grading system is as follows:

A = 93.0 - 100.0	C = 73.0 - 76.9
A- = 90.0 - 92.9	C- = 70.0 - 72.9
B+ = 87.0 - 89.9	D+ = 67.0 - 69.9
B = 83.0 - 86.9	D = 63.0 - 66.9
B- = 80.0 - 82.9	D- = 60.0 - 62.9
C+ = 77.0 - 79.9	F = 59.9 and below

Texts: Molles, Manuel C. Jr. 2013. *Ecology: Concepts and Applications* (6th edition; paperback), McGraw Hill, Boston (ISBN 978-0-07-353249-3).

Class Attendance: It has been my experience that students who do poorly in this course generally have numerous absences. I strongly suggest that you attend and participate in all lecture sessions unless you have a valid reason not to. I will not specifically maintain lecture attendance records. However, if I detect that you have excessive absences or are habitually late to class I will speak with you in private.

Laboratory sessions, because they involve hands-on experiences that cannot be mastered effectively without performing them, are especially critical if one is to become a successful scientist. Unexcused absences from lab will result in a lowering of your lab grade by 20 points (3.3%) for each absence. Excused absences from lab beyond the first two (2) will result in a lowering of your lab grade by 20 points for each absence. You are still required to complete any assignment associated with a laboratory in order to receive the points associated with that assignment.

Grading:	Lecture Exam 1	100 points
	Lecture Exam 2	100 points
	Final Exam	100 points
	Laboratory Assignments	<u>300 points</u>
		600 points

Policy on Academic Honesty: Moravian College's policies on academic honesty and disruptive course-related student behavior can be found in the Student Handbook. It is assumed that each of you has read and understands these policies and the consequences of violating them.

Disability Accommodations: Students who wish to request accommodations in this class for a disability should contact Elaine Mara, assistant director of learning services for academic and disability support at 1307 Main Street, or by calling 610-861-1510. Accommodations cannot be provided until authorization is received from the Academic Support Center.

**Ecology Lecture Schedule
Fall 2012**

Day & Date		Topic	Molles Chapter
M	Aug. 27	Introduction: What is Ecology?	1
W	29	Climate & Biogeography	2
F	31	Field trip: Jacobsberg State Park Meet @ 11:30 AM Collier Entrance; Return by 4:15 PM	
M	Sept. 03	No class-Labor Day	
W	05	Life on Land: Terrestrial Biomes	2
F	07	Life on Land: Terrestrial Biomes	2
M	10	Population Genetics & Natural Selection	4
W	12	Population Genetics & Natural Selection	4
F	14	Population Distribution & Abundance	9
M	17	Population Distribution & Abundance	9
W	19	Population Dynamics	10
F	21	Field Trip: Lehigh Gap Nature Center Meet @ 11:30 AM, Collier front entrance; Return by 4:15 PM	
M	24	Population Dynamics	10
W	26	Population Growth	11
F	28	Population Growth	11
M	Oct. 01	Exam 1	1-4; 9-11
W	03	Life Histories	12
F	05	Field Trip: Deputy Field Study Center Meet @ 11:30 AM Collier Entrance; Return by 4:15 PM	
M	08	No Class-Fall Break	
W	10	Life Histories	12
F	12	Field Trip: Deputy Field Study Center Meet @ 11:30 AM Collier Entrance; Return by 4:15 PM	
M	15	Competition	13
W	17	Competition	13
F	19	Field trip: Tannersville Bog Meet @ 11:30 AM Collier Entrance; Return by 4:15 PM	
M	22	Predation, Herbivory, Parasitism & Disease	14
W	24	Predation, Herbivory, Parasitism & Disease	14
F	26	Mutualism	15
M	29	Mutualism	15
W	31	Life in Water	3
F	Nov. 02	Life in Water	3
M	05	Exam 2	12-15; 3
W	07	Species Abundance and Diversity	16
F	09	Species Abundance and Diversity	16

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M	12	Species Interactions and Community Structure	17
W	14	Species Interactions and Community Structure	17
F	16	Field Trip: Deputy Field Study Center Meet @ 11:30 AM Collier Entrance; Return by 4:15 PM	
M	19	Energy and Nutrient Relations	7
W	21	No Class-Thanksgiving	
F	23	No Class-Thanksgiving	
M	26	Primary Production and Energy Flow	18
W	28	Primary Production and Energy Flow	18
F	30	Succession and Stability	20
M	Dec. 03	Succession and Stability	20
W	05	Global Ecology	23
F	07	Global Ecology	23

Final Exam: Thursday, December 13 @ 8:30 AM

**16-18, 7,
20, 23**

**Laboratory & Field Schedule
Fall 2012**

Date	Experiment	
Fri.	Aug. 31	Patterns in Nature Field Trip-Jacobsberg State Park Meet @ 11:30 AM, Collier front entrance; Return by 4:15 PM
Fri.	Sept. 07	Leaf Angle, Light Interception & Water Relations- Jacobsberg State Park Meet @ 1:00 PM, Collier front entrance; Return by 4:15 PM
Fri.	Sept. 14	Basic Ecological Data Analysis & Statistics Memorial 201 Meet @ 1:15 PM
Thurs.	Sept. 20	TurtlePOP Mark/Recapture Study (optional) LGNC. Time TBA
Fri.	Sept. 21	TurtlePOP Mark/Recapture Study (mandatory) LGNC. Meet @ 11:30 AM, Collier front entrance; Return by 4:15 PM
Sat.	Sept. 22	TurtlePOP Mark/Recapture Study (optional) LGNC. Time TBA
Fri.	Sept. 28	Life Tables & Survivorship Curves Meet at 1:15 PM in Collier 300
Fri.	Oct. 05	Permanent Forest Plot Project Deputy Field Study Center Meet @ 11:30 AM, Collier front entrance Return by 4:15 PM
Fri.	Oct. 12	Permanent Forest Plot Project Deputy Field Study Center Meet @ 11:30 AM, Collier front entrance; Return by 4:15 PM
Fri.	Oct. 19	Tannersville Bog Trip Meet @ 11:30 AM, Collier front entrance; Return by 4:15 PM

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Fri.	Oct. 26	Stream Ecosystem Assessment Meet @ 1:00 PM in Collier to pick up waders
Fri.	Nov. 2	Aquatic Macroinvertebrate Identification and Analysis Meet in Collier 300 @ 1:15 PM
Fri.	Nov. 09	Decomposition Project Meet in Collier 300 @ 1:15 PM
Fri.	Nov. 16	Island Biogeography, Diversity & Soil Microarthropods Deputy Field Study Center Meet @ 11:30 AM, Collier front entrance; Return by 4:15 PM
Fri.	Nov. 23	No lab-Thanksgiving
Fri.	Nov. 30	Soil Microarthropod Identification and Analysis Meet in Collier 300 @ 1:15 PM
Fri.	Dec. 07	Wrap-up