

GRAYS HARBOR COLLEGE
SYLLABUS
BIOLOGY 140-ECOLOGY
5 CREDITS
MOHAMMAD IBRAHIM
2003-2006

I. CONTACT INFORMATION

- Instructor: Mohammad Ibrahim
- Office: 318 E
- Office Hours: MTWThF.
- Phone: (360) 538-4178, 1-800-562-4830 ext. 4178
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- Lecture Hours: M T W Th 10:10-12:30 AM, Room No. 311/317

II. COURSE DESCRIPTION

A study of the interactions between organisms and environmental factors and also the flow of energy and materials through ecosystems. Population dynamics and the place of humanity in the biosphere are also covered. 4 lecture hours; 2 lab hours. Satisfies science or lab requirement area C distribution or specified elective for the AA degree.

III. PREREQUISITES

ENGL 095 or placement in ENGL 101; READ 090 or placement in READ 120; MATH 093 or placement in MATH 098 or higher or instructor permission
Concurrent enrollment in BIOL 140 Lab

IV. TEXTBOOK

Manuel C. Molles Jr. 2001. *Ecolog: Concepts and Applications*. Second Edition. McGraw-Hill Inc, New York. 586 pp. ISBN 0-07-029416167-X

V. OUTCOMES

By the completion of this course students will develop abilities in the area of disciplinary learning, literacy, critical thinking, social and personal responsibility and using resources.

1. Disciplinary Learning

- Develop scientific approach to issues in ecology and environment
- Discuss population dynamics and community interactions
- Discuss the role of biogeochemical cycles in the economy of nature
- Describe the effects of deforestation, erosion, global warming, and pollution on biological diversity

2. Literacy

- Read the assigned topics, handouts, class activities, and develop appropriate answers and write responses
- Prepare list(s) of key terms and vocabulary
- Define/explain the key terms appropriately in your own words
- Describe the process, chemical cycles, and methods related to ecology in your own words

3. Critical Thinking

- Define the terms used in ecology
- Recognize the major local and global environmental issues
- Relate the laws of thermodynamics to the energy flow in ecosystem
- Describe how nature recycle nutrients
- Explain the relationship between biotic and abiotic component of an ecosystem
- Discuss the interactions in population and communities
- Discuss the growth of human population and its impact on the environment
- Identify the major sources of environmental pollution and their effect on organisms

4. Social and Personal Responsibility

- Develop respect for life
- Recognize the existence of other species of living things
- Minimize practices that contribute to the deterioration of the environment

5. Using resources

- Use Lake Swano Watershed/local area habitats for the research project.
- Search articles in the local libraries for your research project.
- Obtain information from the Internet on the global environmental issues.

OUTCOMES SCALE

Course #	Course Title	Disciplinary Learning	Literacy	Critical Thinking	Social Personal Responsibility	Using Resources
BIOL 140	Ecology	4	2	3	1	2

VI. METHODS OF TEACHING

I use lectures, videos, class exercises, and student research project(s) to teach this course. I encourage you to read the book, lecture notes, and handout material before the lecture and other activities. I welcome course related questions and like you to share subject related information in the class.

- **Lecture**

I use Microsoft PowerPoint, class exercises, transparencies, and blackboard to deliver the lectures. I recommend that students cover the lecture material, textbook, and online notes before the lecture

- **Laboratory Exercises**

There are ten lab exercises in this course. The lab exercises are designed to strengthen student's understanding of scientific method and the basic principles of biology. I pass on lab handouts during the lab and explain the lab activity, therefore it is very important that you listen carefully, read the handout, and stay in the lab until you finish the lab.

- **Videos**

I show videos on special topics through out the course. The selected videos contain information and examples from the daily life to simplify the concepts in ecology.

VII. METHODS OF ASSESSMENT

The following methods will be used to assess student's performance in the class:

- **Quizzes 300 Points**

There are 3 quizzes in this course. Each quiz will have 50 questions and is worth 100 points. The time, date, and location of the quizzes are given below, unless stated otherwise. The format of the quizzes will include essay, multiple choice, matching word, and yes or no questions. The test material will come from the **TEXTBOOK, LECTURE NOTES, AND THE LECTURES**.

QUIZ SCHEDULE

Quiz 1- Thursday, July 10

Quiz 2- Thursday, July 24

Quiz 3- Thursday, August 7

- **Summaries from the Silent Spring, 50 Points**

Student will read the assign chapters in the Silent Spring and prepare one page summary. Include the title of the chapter and your name (any code name) on the top of the page. The summary must be typed and double spaced. No hand written material will be accepted. Due dates will be announced in the class

VIII. GRADE EVALUATION

Your grade are evaluated based upon the following:

- 3 Quizzes 300 points
- Silent Spring Summaries 50 points
- Labs 60 points
- TOTAL 410 points

IX. GRADING SCALE (TOTAL POINTS 350)

%	GPA	GRADE	%	GPA	GRADE
100.00	4.00	A	76.40	2.40	C+
92.00	4.00	A	76.00	2.40	C+
91.60	4.00	A	75.60	2.40	C+
91.20	3.90	A-	75.20	2.30	C+
90.80	3.90	A-	74.80	2.30	C+
90.40	3.80	A-	74.40	2.20	C
90.00	3.80	A-	74.00	2.20	C
89.60	3.80	A-	73.60	2.20	C
89.20	3.70	A-	73.20	2.10	C
88.80	3.70	A-	72.80	2.10	C
88.40	3.60	B+	72.40	2.10	C
88.00	3.60	B+	72.00	2.00	C
87.60	3.60	B+	71.60	2.00	C
87.20	3.50	B+	71.20	1.90	C-
86.80	3.50	B+	70.80	1.90	C-
86.40	3.40	B+	70.40	1.80	C-
86.00	3.40	B+	70.00	1.80	C-
85.60	3.40	B+	69.60	1.80	C-
85.20	3.30	B+	69.20	1.70	C-
84.80	3.30	B+	68.80	1.70	C-
84.40	3.20	B	68.40	1.60	D+
84.00	3.20	B	68.00	1.60	D+
83.60	3.20	B	67.60	1.60	D+
83.20	3.10	B	67.20	1.50	D+
82.80	3.10	B	66.80	1.50	D+
82.40	3.00	B	66.40	1.40	D+
82.00	3.00	B	66.00	1.40	D+
81.60	3.00	B	65.60	1.40	D+
81.20	2.90	B-	65.20	1.30	D+
80.80	2.90	B-	64.80	1.30	D+
80.40	2.80	B-	64.40	1.20	D
80.00	2.80	B-	64.00	1.20	D
79.60	2.80	B-	63.60	1.20	D
79.20	2.70	B-	63.20	1.10	D
78.80	2.70	B-	62.80	1.10	D
78.40	2.60	C+	62.40	1.00	D
78.00	2.60	C+	62.00	1.00	D
77.60	2.60	C+	61.60	1.00	D
77.20	2.50	C+	61.20	0.90	F
76.80	2.50	C+	60.80	0.90	F

X. POLICIES

- **Expectations from Student**

1. Come to the class on time and stay for the entire period.
2. Do not whisper or talk to one another when lecture is in progress.
3. Do not pack your bags before the class is over.
4. Turn off the cellular phone/ pager during the class.
5. Do not do homework for other classes in this class.
6. Read the handouts, syllabus, exam dates, and the due date.
7. Sign the attendance sheet.

- **American Disability Act**

Any individual who has a documented disability, which might interfere with his or her ability to fully participate in the class, may be eligible for accommodations. Feel free to contact the Disability Support Services program located in the Student Services, room 119. Any information regarding disability will be kept confidential.

- **Attendance**

Attendance is key to your success in this class. I expect student to arrive early and attend classes regularly. It is not part of the grades but will be reported to the administration if a student misses classes regularly.

- **Academic dishonesty**

Academic dishonesty, as mentioned and described in the G.H. College General Catalog 2003, would not be tolerated. Cheating on quizzes, exams, assignment or copying someone else's work will receive failing grade.

- **Guidelines for Typing Research Paper/Term Paper/Abstract**

1. Use white 8-1/2 X 11 paper.
2. Type on one side of the paper.
3. Leave one-inch margins at the top, bottom, right, and left
4. Use size 12 font throughout the manuscript EXCEPT titles and headings
5. Use size 14 or 18 bold face font for titles and headings
6. Double space after every line
7. Double space after titles and headings
8. All typing should be flush-left
9. Indent paragraphs 5 spaces

NOTE: student will lose points on their research paper/term paper etc. if the above requirements are not met.

XI. CLASS SCHEDULE

LESSON PLAN

<u>LESSON</u>	<u>TOPICS</u>	<u>CHAPTER</u>
1	Syllabus, Introduction to ecology	1
2	History of ecology	1
3	Scope of ecology	1
4	Biomes, Soil	2
5	Tropical rain forests, tropical dry forests	2
6	Tropical savanna, desert, grassland	2
7	Temperate forest, boreal forest, tundra	2
8	Terms related to aquatic ecology	3
9	Lakes and ponds	3
10	Rivers and streams	3
11	Factors affecting the macro and microclimate of the region; Aquatic temperatures	4
12	Temperature and performance at molecular level; temperature and bacterial activity	4
13	Heat gain and heat loss, temperature regulation by plants	4
14	Temperature regulation by animals, reducing metabolic rate	4
15	Water contents of air; water movements in aquatic environment	5
16	Water acquisition by plants and animals	5
17	Water conservation by plants and animals	5
18	Modes of nutrition	6
19	Plants and photosynthesis; modes of nutrition in animals	6
20	Population genetics	8
21	Population distribution and abundance	9
22	Population dynamics	10
23	Population growth	11
24	Competition, intraspecific competition	13
25	Interspecific competition; Habitat, niche and principles of competition	13
26	Predation and herbivory, parasitism and disease	14
27	Mutualism and symbiosis	15
28	Food webs and food chains	17
29	Production in the ecosystem	18

NOTE: This is a tentative syllabus and will be adjusted periodically