Fall 2015

BIOS 3653

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University of New Orleans

BIOS 3653 - GENERAL ECOLOGY
Dr. Jerry Howard
Fall Semester 2014

Lecture: 11:00-11:50, Biology 101
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Office Hours: M 10-11 AM, W, F 12:30-3:00

Course Notes

1) Student Learning Objectives: After completing this course, students will be able to:

1. Explain principles of adaptation to the environment and describe major adaptive syndromes.
2. Describe major patterns of population and community distribution and organization.
3. Describe ecological processes structuring the distribution and organization of populations, communities, and ecosystems.
4. Explain current theories about how ecological processes structure populations, communities, and ecosystems.
5. Analyze simple quantitative models of ecological processes.
6. Interpret graphical information relating to ecological processes.
7. Analyze novel situations and, knowing the major patterns of ecological organization, predict the responses of individual organisms, populations, communities, and ecosystems to these conditions.

2) Text and required materials:

Rickleffs, R.E., *The Economy of Nature,* 7th ed., Freeman. ISBN 0-7167-8697-4. **Do not use an earlier edition.**

i>Clicker 2. **Do not buy i>Clicker or i>Clicker +.** You may still use them in this class if you already have them, but you cannot use them in other College of Sciences classes.

Bluebook for in-class essays. These are available at the UNO bookstore for 45 cents each, item # MMS000039437.

3) Office hours: Hours may be altered as required due to changing schedules, new assignments, meetings, etc., during the semester. Come to class, check my door (Biology 221) or consult Moodle for current office hours each week.

4) Attendance: Attendance at each class meeting is expected. We will monitor attendance using i>Clickers and part of your grade will depend on attendance points. If you know you will miss class for a compelling reason, please let me know in advance and I will not count missing in-class participation points against your grade. If you miss unexpectedly, please bring a doctor's excuse or other documentation (court summons, etc.) It is still your

responsibility to obtain notes for any classes you miss.

5) Conduct in class: This class requires focus and concentration. Behavior that is disruptive or disrespectful of other class members is not acceptable. Cell phone use, including texting, is prohibited during class. The use of any device with storage or outside communication capacity during any quiz, exam, or other evaluation will be taken as evidence of cheating and will result in a failing grade for that evaluation.

6) Grading: Grades will be based on four hourly exams, a final exam, quizzes on each assigned chapter in the text, and in-class questions and homework assignments. You may drop the lowest of your four exam scores, and count only the three highest scores toward your final grade. Point distributions are as follows:

Best 3 of 4 hourly exams	300
Chapter quizzes	100
In-Class questions and homework	100
Final Exam	100
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Total Points	600

7) Hourly exams: Four exams will be given, each focusing on approximately 9 lectures. The exams may include matching, definitions, fill-in, multiple choice, calculations, or essay questions. Some multiple choice questions may have more than one correct answer. Essays and calculation questions will typically comprise at least 50% of the points on each of the exams, and may be substantially more in some cases. In addition to factual content, grading of essays may focus on grammar, spelling, and logical construction.

8) Final exam: The final exam will have two sections, one covering the final few class meetings in detail (25-30 points) and a general, cumulative course review (70-75 points). The cumulative course review will focus on mastery of essential organizing themes in modern ecology rather than detailed analysis of particular problems.

9) In-class questions and assignments: This course uses i>Clicker 2 for classroom responses. No device other than i>Clicker is acceptable for classroom response; cell phones and tablets may not be used. We will have regular multiple-choice questions during class to review and check your understanding of material. Some will be ungraded questions in which you receive credit for any response, whether correct or not; others will require the correct answer to receive credit. We will also utilize one-minute essays periodically, and you must use a blue book for these essays. Essays are unannounced. You should plan on bringing these items to every class meeting.

10) Chapter quizzes: At the beginning of class on the days indicated we will have several clicker questions related to chapter content. The schedule for these quizzes is given in the right

hand column of the tentative lecture outline on pages 4 and 5. All chapter quiz questions require the correct answer for credit.

11) Moodle will be used for lecture outlines, course announcements and occasional special assignments. Participation and/or performance points may be awarded for special assignments as specified in class. Please consult Moodle regularly for information and announcements.

12) **FINAL DROP DATE** is **October 14, 2015**.

Academic Integrity

Academic integrity is fundamental to the process of learning and evaluating academic performance. Academic dishonesty will not be tolerated. Academic dishonesty includes, but is not limited to, the following: cheating, plagiarism, tampering with academic records and examinations, falsifying identity, and being an accessory to acts of academic dishonesty. Refer to the Student Code of Conduct for further information. The Code is available online at http://www.studentaffairs.uno.edu.

Accommodations

It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities that may affect their ability to participate in course activities or to meet course requirements. Students with disabilities should contact the Office of Disability Services as well as their instructors to discuss their individual needs for accommodations. For more information, please go to http://www.ods.uno.edu.

This material is available in alternative formats upon request. Please contact: Coordinator, Disabled Student Services, 260 University Center, 280-6222 (voice/TDD) or 280-3975 (fax).

Tentative Course Schedule

Date	Topic	Reading	Quiz over:
Aug 19	Introduction	Ch 1	
Aug 21	Terrestrial Biomes	Pp 138-148	
Aug 24	Aquatic Biomes	Pp 148-157	Ch 1, Ch 6
Aug 26	Global Climate system	Pp 113-127	Ch 5
Aug 28	Local climate	Pp 127-135	
Aug 31	Adaptation to aquatic environments	Ch 2	Ch 2
Sep 2	Adaptation to terrestrial environments	Ch 3	Ch 3
Sep 4	Adaptation to variable environments	Ch 4	Ch 4
Sep 7	LABOR DAY HOLIDAY		
Sep 9	Life histories	Ch 8	Ch 8
Sep 11	Population characteristics	Pp 248-256	Ch 11
Sep 14	**EXAM 1**		
Sep 16	Population distributions		
Sep 18	Demography	Pp 283-292	Ch 12
Sep 21	Projecting population growth from the life table		
Sep 23	Population growth	Pp 271-276	
Sep 25	Density dependence	Pp 276-283	
Sep 28	Population regulation	Pp 296-307	Ch 13
Sep 30	Metapopulations	Pp 256-268, 308-314	
Oct 2	Matrix models		
Oct 5	Resources and species interactions	Pp 368-372	Ch 16
Oct 7	**EXAM 2**		
Oct 9	Competition in nature	Pp 372-4, 379-388	
Oct 12	Competition theory	Pp 374-378	
Oct 14	Niche-based competition		

Oct 16	**FALL BREAK**		
Oct 19	Character displacement		
Oct 21	Exploitation in nature	Pp 314-325	Ch 14
Oct 23	Exploitation theory	Pp 325-331	
Oct 26	Evolutionary dynamics of exploitation		
Oct 28	Parasites		Ch 15
Oct 30	Herbivores	Pp 336-339	
Nov 2	**EXAM 3**		
Nov 4	Mutualism in nature	Pp 392-402	Ch 17
Nov 6	Mutualism theory and evolution	Pp 402-408	
Nov 9	Communities	Pp 414-422	Ch 18
Nov 11	Food webs	Pp 430-439	
Nov 13	Local diversity regulation	Pp 422-430	
Nov 16	Succession		Ch 19
Nov 18	Biogeography	Pp 516-530	Ch 22
Nov 20	Gobal biodiversity	Pp 530-538	
Nov 23	Energy in ecosystems		Ch 20
Nov 25	**EXAM 4**		
Nov 27	**THANKSGIVING**		
Nov 30	Matter in ecosystems	Pp 492-501	Ch 21
Dec 2	Nutrient cycling	Pp 501-509	
Dec 4	Global Ecology		Ch 23

Dec. 10 (Wednesday) FINAL EXAM, 10 AM - 12 PM