**ECOLOGY AND EVOLUTION**

**Biology 349/549**

**Syllabus**

**Spring 2017**

**Adler**

**Week Topic**

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INTRODUCTION

30 Jan-3 Feb Syllabus, grading, course overview; An introduction to ecology

*Read Chapter 1 (pp. 3-21)*

ORGANISMAL ECOLOGY

6-10 Feb Population genetics

*Read Chapter 2 (pp. 25-43)*

13-17 Feb Natural selection, speciation,

and extinction

*Read Chapter 3 (pp. 45-73)*

20-24 Feb Behavioral ecology

*Read Chapter 4 (pp. 75-99)*

**Lecture Exam 1 Thursday 23 Feb.**

PHYSIOLOGICAL ECOLOGY

27 Feb-3 MarTemperature; Water; Nutrients

*Read Chapters 5, 6, & 7 (pp. 101-137)*

POPULATION ECOLOGY

6-10 Mar Demographic techniques and population

patterns; Life tables and demography

*Read Chapters 8 & 9 (pp. 155-187)*

13-17 Mar Population growth

*Read Chapter 10 (pp. 188-216)*

**Lecture Exam 2 Thursday 16 Mar.**

SPECIES INTERACTIONS

20-24 Mar **Spring break**

27-31 Mar Competition and coexistence;

Facilitation

*Read Chapters 11 & 12 (pp. 219-265)*

3-7 Apr Predation; Herbivory; Parasitism

*Read Chapters 13, 14, & 15 (pp. 267-*

*327)*

COMMUNITY ECOLOGY

10-14 Apr Species diversity; Species richness patterns

*Read Chapter 17 & 18 (pp. 351-389)*

17-21 Apr Species richness and community services

*Read Chapters 19 (pp. 391-410)*

24-28 Apr Succession; Island biogeography

*Read Chapters 20 & 21 (pp. 413-444)*

**Lecture exam 3 Thursday 27 April**

BIOMES

1-5 May Terrestrial biomes; Marine biomes; Freshwater biomes

*Read Chapters 22, 23, & 24 (pp. 447-515)*

ECOSYSTEMS ECOLOGY

8-12 May Food webs and energy flow; Biomass production; Biogeochemical cycles

*Read Chapters 25, 26, & 27 (pp. 517-579)*.

**Lecture exam 4 Thursday 11 May**

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**GRADING**

# Basis of grade

Undergraduate students

400 total points

4 lecture exams, 100 points each. **Lecture exams cannot be taken after the scheduled date except in the case of documented medical or personal emergencies, job interviews, etc.** In the case of legitimate absences, a make-up exam will be given but will not be the same as the regularly-scheduled exam. Exams can be taken early, in which case they will be the same as or nearly the same as the regularly-scheduled exams.

Graduate students

500 total points

4 lecture exams, **PLUS** one 10-page paper with 15 citations from the primary literature on any topic in ecology, pending my approval of the topic. The review paper will count 100 points.

In addition to the review paper, graduate students must demonstrate, relative to undergraduate students, a:

1. greater depth of knowledge of the material,
2. greater level of synthesis of multiple topics, and
3. more sophisticated level of communication.

These three desiderata should be reflected in the written exams, review paper, and contributions to in-class discussions.

*Grading scale*

* 1. A
     1. B
     2. C
     3. D (F for graduate students)

<60 F (F for graduate students)

Grades of A-, B+, B-, C+, C- (also to be considered F for graduate students), D+, and D- may also be given.

## TEXT

Stiling, P. 2015. Ecology: global insights and investigations. Second edition. McGraw Hill, New York, NY. **REQUIRED**.

**OFFICE HOURS** (room HS-37, phone 424-3068, email adler@uwosh.edu)

Monday, Tuesday, Thursday 10-11 AM.