

Spring 2-1-2019

BIOE 172N.01: Introductory Ecology

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BIOE 172, Introductory Ecology, Section 01– Spring 2019

Division of Biological Science, University of Montana

I. Course Information:

Course Id and CRN: BIOE 172 01: CRN 34548 (3 credits)

Time and place: M/W 12:30-1:50PM, Gallagher Business Building, Rm L09

II. Contact Information:

Instructor: Dr. Maurice Valett

Office & hours: HS 513A, Office hours, M 10:30-11:30 AM, T 8:30-10:00

Phone: 406-243-6058

Email: maury.valett@umontana.edu

III. Course Description

BIOE 172 provides an overview of the science of ecology including its focal inquiries, theoretical foundations, and modern applications. Students will be exposed to the range of specialties within ecology, their distinctions and commonalities, and develop the ability to understand the ecological character of many contemporary environmental issues.

IV. Course Outcomes

A) Learning outcome 1

Developed ability to read and interpret graphical scientific data in the context of ecological investigations

B) Learning outcome 2

Established ability to discuss and assert general principles associated with ecology as they pertain to ecological investigations

C) Learning outcome 3

Development of fundamental skills necessary to interpret scientific concepts associated with ecology as they appear in the popular press

D) Learning outcome 4

Acquisition of a composite understanding required to apply concepts fundamental to ecology and its approaches to assessment of real-world problems influencing natural and human systems

V. Required Texts, Readings, and other Resources

A) Text

No text is required for the course. Three texts are placed on reserve in Mansfield Library and are available for in-library use. In addition, I have listed an on-line text that is available through the library that can be downloaded for 21 days at a time. Students will not be held responsible for content of the textbooks on reserve unless the material is covered in class or in other supplementary reading material (see below). Texts that will be on reserve or on-line will include:

- 1) Ecology: individuals, populations, and communities, Michael Begon, John L Harper, Colin R Townsend, 1986
- 2) Ecology: concepts and applications, Manuel C. Molles Jr., 2013
- 3) Ecology, Michael L Cain, 2008
- 4) Ecology, Mohan P Arora, 2009 (on-line through Mansfield Library)

B) Moodle and Other Resources

Course resources will be managed via Moodle (<https://moodle.umt.edu/>) and include:

1) Lecture handouts

Lecture outlines that will include definitions and supplementary materials will be available on Moodle as MS Word files. Students are encouraged to bring these files to class. In general, however, it is best not to use printed versions of the handouts for note-taking purposes. Notes are better taken on separate pages.

2) Lecture PPT files

PowerPoint files used by the instructor will be made available on the Moodle site as PDF files.

3) Recorded Lectures

The Moodle site will include links to YouTube videos of each lecture. Lecture videos will be posted to YouTube usually by end-of-business on the day of the lecture.

VI. Course Requirements

A) Exams

Four exams are offered during the semester on the dates indicated in the class schedule below. Exam dates will not be moved. Each exam will be of 80-minute duration covering the specific material indicated in the class schedule below. The fourth exam will be offered during finals week on Friday May 3 from 10:10AM-12:10PM. That exam will cover only the material provided in the 4th section of the course (i.e., not a comprehensive exam). Exams will be closed book, cover all materials presented since the beginning of class or the prior exam, and will consist of fill-in-the-blank, T/F, multiple-choice, graphical interpretations, or short-answer questions. The four exams will constitute 90% of the course grade (i.e., 22.5% each). The remaining 10% of the grade will be based on attendance (see below).

Exams may be taken early only as the result of an official university conflict and only if scheduled ahead of time with the instructor. No exam can be taken after its scheduled date. Any missed exams will be scored as 0%.

B) Policies on attendance and student conduct

1) Attendance

Attendance is expected and necessary. Students cannot contribute or receive if they are not present. A student's propensity to attend class will be addressed randomly through five 'attendance counts' over the course of the semester. Students will be rewarded with 2% scores for each date on which they are registered as present.

The instructor recognizes that occasional absence may occur due to a variety of reasons. Any absence can be considered excused if and only if the student provides via email an indication of absence. This should be accomplished by providing 'missing class today' as the subject line on an email to the instructor time-stamped prior to 12:30pm on the day of class. Any email time-stamped after 12:30pm will not provide an excused absence. If a student is absent during one of the five attendance assessment days but has provided an email meeting the above requirements, they will receive the 2% reward offered to attending students.

2) Student conduct

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code available at the following link: [Student Conduct Code](#)

- Come to class, even if you are late - be prepared to listen and engage in the day's topics,
- Keep cell phones and other electronic devices turned off during class
- Respect your colleagues by refraining from disruptive behavior, including engaging in non-class related activities during lecture
- Foster academic honesty

C) Grading and grading scales

1) Grading scale

Exams (4): 90% (22.5% each)

Attendance (5): 10% (2% each)

Grading scale:

93-100 = A

90-92 = A-

87-89 = B+

83-86 = B

80-82 = B-

77-79 = C+

73-76 = C

70-72 = C-

60-69 = D

59 and below = F

2) Grades and compensation

Each student will receive the grade they earn. Students are responsible to keep track of their own grade. Grades for each component as well as a running total of the student's cumulative grade can be viewed via Moodle. Please bear in mind that extra credit will not be offered to individual students. Optional extra credit questions may be offered on any given exam, but under no circumstance will individual students be offered extra credit opportunities to compensate for poor performance at any point, including after final grades are submitted.

VII. Other Information

A) Special Accommodations

Students with disabilities may request reasonable modifications by contacting me within the first two weeks of class. The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students (DSS). "Reasonable" means the University permits no fundamental alterations of academic standards or retroactive modifications. If you think you may have a relevant disability, please contact DSS in Lommasson 154. See <http://www.umt.edu/disability> for more information.

B) Grievance Procedures

The formal means by which the course and instructor quality are evaluated is through the written evaluation procedure at the end of the semester. The instructor and department chair receive copies of the summary evaluation metrics and all written comments once course grading is completed and submitted. Students with concerns or complaints during the semester should first communicate these to the instructor (verbally, not via email). If the student does not believe the issue has been resolved appropriately after meeting with the instructor, the student should contact the Associate Dean of the Division of Biological Sciences.

VIII. Course Schedule (draft version – subject to change)

Wk Lect # Day/Date I. The ecology of individuals Concepts

- 1) 1 1 M Jan 14 Introduction and Terminology definitions, types, levels
- 2) 1 2 W Jan 16 Life on land and in water 1 climate, biomes, soils
- 3) 2 3 M Jan 21 no class MLK Jr. Day
- 4) 2 4 W Jan 23 Life on land and in water 2 aquatics & osmoregulation
- 5) 3 5 M Jan 28 Energy and nutrients 1 energetics
- 6) 3 6 W Jan 30 Energy and nutrients 2 trophic structure
- 7) 4 M Feb 4 Exam 1 Section I
- 8) 4 W Feb 6 Exam I review Exam 1 review

Wk Lect # Day/Date II. Populations & species interactions Concepts

- 9) 5 7 M Feb 11 Population Dist. and abundance 1 distribution, density, spacing
- 10) 5 8 W Feb 13 Population Dynamics population dynamics
- 11) 6 M Feb 18 no class President's Day
- 12) 6 9 W Feb 20 Population growth 1 growth and growth models
- 13) 7 10 M Feb 25 Population growth 2 exponential growth
- 14) 7 11 W Feb 27 Population growth 3 logistic growth
- 15) 8 M Mar 4 Exam 2 Section II
- 16) 8 W Mar 5 Exam 2 review Exam 2 review

17) Wk Lect # Day/Date III. Communities and ecosystems Concepts

- 18) 9 12 M Mar 11 Species interactions 1 competition, predation
- 19) 9 13 W Mar 23 Species Interactions 2 predation, mutualism
- 20) 10 14 M Mar 18 Communities structure and diversity
- 21) 10 15 W Mar 20 Food webs food web structure vs. function
- 22) 11 16 M Mar 25 Ecosystems 1 energy flow 1
- 23) 11 17 W Mar 27 Ecosystems 2 energy flow 2
- 24) 12 18 M Apr 1 Ecosystems 3 decomposition
- 25) 12 W Apr 3 Exam 3 Exam 3 material

Wk Lect # Day/Date IV. Large-scale ecology Concepts

- 26) 13 M Apr 8 Exam 2 review Exam 2 review
- 27) 13 19 W Apr 10 Succession 1 disturbance and change
- 28) 14 20 M Apr 15 Succession 2 disturbance and change
- 29) 14 21 W Apr 17 Global ecology global change ecology
- 30) 15 22 M Apr 22 Global ecology global change ecology
- 31) 15 23 W Apr 24 review/spillover review/spill over

- 32) 16 F May 3 Exam 4 10:10AM-12:10PM Section IV exam material