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BIOE 371.R00: General Ecology Laboratory

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Instructor

H. Maurice Valett, Holly Jackson, Scott Waller, Cole Wolf, Sarah Twoteeth, and Scott Debnam

BIOE 371, General Ecology Laboratory, Section xx– Autumn 2020
Division of Biological Science, University of Montana

I. Course Information:

Course Id and CRN: BIOE 371 (2 credits)
01: 70010
02: 70011
03: 70012
04: 70388
05: 73729

Time and place: Zoom-based lab orientation 1:00-2:00PM
virtual laboratory exercises 2:00-5:00pm

II. Contact Information:

Professor of Record:	H. Maurice Valett	maury.valett@umontana
Section Instructors:	Holly Jackson (01)	holly1.jackson@umontana.edu
	Scott Waller (02)	scotte.waller@umontana.edu
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III. Course Description

BIOE 371 provides an overview of the science of ecology including its focal inquiries, theoretical foundations, and modern applications through laboratories addressing central ecological concepts. Students will be exposed to the range of ideas and activities via computer-based ecology laboratories and associated write-ups. Focus on the generation of professional quality tables, graphics, data analysis, and the composition of scientific 'reports' will promote writing skills and the basic quantitative taught to generate specialties within ecology, their distinctions and commonalities, and develop the ability to understand the ecological character of many contemporary environmental issues.

The course is offered remotely (i.e., through Zoom) and will include considerable student participation outside of the scheduled Zoom period. NOTE: The Zoom interaction will be recorded and made available to all students via Moodle (see below). There is high demand for spaces on campus to accommodate students with inadequate WiFi in their homes or quick turnarounds between face-to-face and remote classes. Remote learning spaces, days and times available, will be posted on [the Keep on Learning website](https://www.umt.edu/umonline/keep_on_learning/default.php) (https://www.umt.edu/umonline/keep_on_learning/default.php). There will be signs posted outside of these buildings and rooms to indicate their availability.

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

Develop fundamental skills in scientific writing and the capacity to produce properly structured reports with scientific content and appropriate rigor.

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. There is an on-line Ecology 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.

B) SimuText

The lab will rely heavily on the SimuText Laboratory modules that will provide simulated ecology laboratories and graded questions for six of the nine labs. Information on student registration for SimuText is available on Moodle.

C) Moodle and Other Resources

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

1) Lecture handouts and readings

There will be a number of handouts and readings relevant to the different labs and students can expect these files to be available before lecture via Moodle. Handouts and readings will generally be supplied in either MS Office or PDF format.

2) Lecture PPT files

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

3) Recorded lectures

The Moodle site will include links to videos of the Zoom session used to introduce and orient the contents and intentions for each lab. Lecture videos will be posted to YouTube usually by end-of-business on the day of the lecture.

VI. Course Requirements

A) On-line laboratory exercises and graded questions

1) Laboratories and graded questions

A total of nine on-line laboratories are provided to illustrate fundamental ecological relationships while utilizing simulation and illustration technology. The first laboratory addresses the use of productivity software as it relates to the production of a scientific assessment. A productivity software primer is provided as a handbook for scientific report writing. Six simulations are provided by SimBio, one by EarthLabs, and one by PowerPoint. Each of the SimBio laboratories culminate in 10 graded questions provided by the SimBio platform. For the other two laboratories, graded questions will be provided as quizzes on Moodle. Both SimBio and Moodle quizzes close one week after the beginning of the laboratory with which they are associated (i.e., questions on the Barnacle Zone simulation will automatically close at 1pm one week after the date of the laboratory introducing engagement in the Barnacle Zone simulation at 1pm on that day. Answers will not be accepted after the simulation closes access to the graded questions.

2) Laboratory write-ups

Three lab write-ups will be required of participating students. Write-ups will follow the format of a scientific manuscript with strict expectations related to format and content. Write-ups will include cogent descriptions of the academic pursuit, clear and revealing data analysis and results presentation, and insightful discussion and conclusions related to the ecological issue under investigation. Specifics for the write-ups are provided in the productivity software primer and will be addressed in the introductory lecture to Lab #1. The rubric guiding the production of the write-ups is specific and due dates are final. For both rough drafts and final forms of the write-ups, materials are due at 1pm on the appropriate due date, should be provided to the section instructor via email, and will be accepted only if the email time stamp shows them to be received before the 1pm limit on the designated due date. Rough drafts received after the 1pm time stamp on the date due will not be addressed. Final write-ups that are not received by the 1pm time stamp on the date due will be scored as zero. Do not miss a deadline!

B) Policies on attendance and student conduct

1) Attendance

Attendance is expected and necessary. Despite the fact that we are learning remotely, students cannot contribute or receive if they are not attending the lectures provided to place laboratory activities into a broader ecological context. Introductory lectures are expected to comprise the first hour of the laboratory; during the next three hours, section instructors will be available on Zoom to interact as necessary to promote investigation.

The instructor recognizes that occasional absence may occur due to a variety of reasons. Students are ultimately on the honor system (see below) and are individually responsible for materials and their timely submission.

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](#)

- Join the Zoom meetings, 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
- Foster academic honesty

C) Grading and grading scales

1) Points available

Graded questions (8):	80 pts (40% total)
Laboratory write-ups (3):	120 pts (60% total)

i) write-up #1	30 pts (15%)
ii) write-up #2	40 pts (20%)
iii) write-up #3	50 pts (25%)

2) 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. Note that Moodle does not calculate % cumulative scores based on the number of points available at any given point in the semester. Instead, percent scores will reflect the proportion of total points amassed at the time of assessment. Please bear in mind that extra credit will not be offered to individual students. 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.

COVID-19 may present unique challenges to students and instructors. If you need further assistance with accommodations for your classes, contact Disability Services for Students at 406-243-2243.

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, due dates, and point distribution

Table 1. Laboratory activities, due dates, and point content for SimBio graded questions (6), graded questions provided via Moodle (2), and three laboratory write-ups (bolded lab subjects). Due dates require that materials are provided electronically by 1pm on the specified date. Write-up rough drafts will be edited and returned before final forms are graded based on the rubric provided under the write-up section of the syllabus.

Lab No./Subject	SimBio Questions (Due Date)	Moodle Questions (Due Date)	Lab Write-up	Write-up Rough draft Due Date	Write-up Rough Draft Return Date	Write-up Final Draft Due Date	Write-up Final Draft Return Date
1 Introduction (Aug 24- Aug 28)				-	-	-	-
2 Experimental Design (Aug 31 – Sep 4)	10 pts (Sep 7-Sep 11)		30 pts	Sep 7-11	Sep 14-18	Sep 21-25	Sep 28-Oct 2
3 Biomes (Sep 14 – Sep 18)		10 pts (Sep 21-25)		-	-	-	-
4 Isle Royal (Sep 21-Sep 25)	10 pts (Sep 28-Oct 2)		40 pts	Sep 28-Oct 2	Oct 5-9	Oct 12-16	Oct 19-23
5 Barnacle Zone (Sep 28 – Oct 2)	10 pts (Oct 5–Oct 9)			-	-	-	-
6 Keystone Predator (Oct 5 – Oct 9)	10 pts (Oct 12-Oct 16)			-	-	-	-
7 Int Disturbance Hypothesis (Oct 12 – Oct 16)	10 pts (Oct 19-Oct 23)			-	-	-	-
8 Decomposition (Oct 19 – Oct 23)		10 pts (Oct 26-30)	50 pts	Oct 26-30	Nov 2-6	Nov 9-13	Nov 16-18
9 Nutrients (Oct 26-Oct 30)	10 pts (Nov 2 – Nov 6)			-	-	-	-
Total =	60 pts	20 pts	120 pts				