

NRES 151 - Ecological Basis for Natural Resource Management

Course Information - Spring 2020

Purpose: This course will introduce you to the principles of ecology that underlie the practice of natural resource management. It will provide you with a foundation that will run through all your introductory natural resources courses. Additionally, the lab exercises will give you hands-on experience with measurement and data collection, preparation of technical reports, use of library resources, use of computer models, and development of your critical thinking skills. **As faculty, our purpose is to help you learn and understand the material as far as possible. But regardless of how we offer it, the material is meaningless unless you actively engage in the learning process. Attendance in lecture and lab is important, but seeking to know and understand is more than just showing up. To do well in this course, you will need to be attentive, do assigned reading, think critically, and ask questions.**

Lecture staff: Although both Drs. Riddle and Werner will share the lecture, Dr. Werner will coordinate the course, so please contact him if you have questions or problems with logistics of the course.

Dr. Jason Riddle, Wildlife
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Office Hours: Wednesday 12-1:50 pm

Dr. Les Werner, Forestry
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Office Hours: TBA

Lab staff: Dr. Diane Lueck
Ms. Sabine Berzins
Mr. Matthew Hannenman

Ms. Sophie Demchik
Mr. Ross McLean

Grading: Your grade for the course is based on the following split between lecture and lab:

LECTURE (60%)	LAB (40%)
Exam I30%	Reports20%
Exam II30%	Library exercise.....5%
	Lab final15%

Text: The text we will be using for the class is: Smith, T.M., and R.L. Smith. 2012. Elements of ecology. 8th edition. Benjamin Cummings, Boston.

Please do all readings prior to the scheduled lecture period. There will also be a lab manual provided to you on the first day of lab. There will be no labs during the first week of classes.

PowerPoint: We use PowerPoint for the lecture, and it can be a powerful tool, but unfortunately it has led to a number of problems in the course (see **Attendance** below). We will post skeletal versions of our PowerPoint notes prior to lectures in Canvas, but they should not be considered an adequate replacement for attending lecture nor for taking notes in class.

Lecture Reviews: We will try to do our best to help you learn the material in this class. We will post review questions for each lecture that you should review before coming to lecture for the next material. We plan to offer a review session just prior to each of the 3 scheduled exams.

Attendance: As with any course, attendance and all course materials are your responsibility. Hopefully, your attendance will be motivated by your desire to learn. If you miss an exam, you must have a doctor's note to verify your illness. Additionally, since all lecture notes will be published in the public folders, there may be a temptation to sometimes "skip" a lecture. Don't. It will be nearly impossible to get a good grade if you skip lectures or lab. You simply will not get the understanding of the material by just reviewing the notes.

Lab: We will be out in the field for at least 3 labs. Although we've scheduled them for the latter part of the semester, we could still have poor weather. Field trips will go regardless of the weather, so be sure to dress accordingly. Your lab instructor will provide additional information on lab reports and exams.

NRES 151 - Tentative Lecture Schedule
Spring 2020

Date	Topic	Text*	Lecturer
T Jan 21	Introduction	Pages 1-14	Riddle
Th Jan 23	Populations	Pages 165-178; 198-199; 202-220	Riddle
T Jan 28	Populations	Pages 165-178; 198-199; 202-220	Riddle
Th Jan 30	Population growth and carrying capacity	Pages 165-178; 198-199; 202-220	Riddle
T Feb 4	Population growth and carrying capacity	Pages 70-90	Riddle
Th Feb 6	Natural selection and fitness	Pages 70-90	Riddle
T Feb 11	Natural selection and fitness	Pages 120-145	Riddle
Th Feb 13	Predation	Pages 274-289	Riddle
T Feb 18	Predation	Pages 274-289	Riddle
Th Feb 20	Herbivory	Pages 289-295	Riddle
T Feb 25	TBD	Pages 289-295	Riddle
Th Feb 27	Competition	Pages 239-249; 252-270	Riddle
T Mar 3	Competition	Pages 299-305	Riddle
Th Mar 5	Parasitism	Pages 299-305	Riddle
T Mar 10	Mutualism	Pages 305-315	Riddle
Th Mar 12	EXAM 1		
SPRING BREAK			
T Mar 24	Exam I Review.		
Th Mar 26	Ecosystems: Ecosystem development: primary succession	Pages 353-367; 19-32	Werner
T Mar 31	Ecosystem development: primary succession	Pages 353-367	Werner
Th Apr 2	Ecosystem development: primary succession	Pages 353-367	Werner
T Apr 7	Ecosystem development: primary succession	Pages 353-367	Werner
Th Apr 9	Ecosystem development: secondary succession	Pages 353-367	Werner
T Apr 14	Ecosystem development: secondary succession	Pages 353-367	Werner
Th Apr 16	Ecosystem development: secondary succession	Pages 353-367	Werner
T Apr 21	Ecosystem development: succession and soil development	Pages 57-63	Werner
Th Apr 23	Ecosystem development: succession and soil development	Pages 57-63	Werner
T Apr 28	Ecosystem development: succession and soil development	Pages 57-63	Werner
Th Apr 30	Energy Transfer and Biogeochemical Cycling	Pages 419-438	Werner
T May 5	Energy Transfer and Biogeochemical Cycling	Pages 397-40	Werner
Th May 7	Energy Transfer and Biogeochemical Cycling	Pages 403-417	Werner
M May 11	FINAL EXAM –Rm 170 CNR – 12:30-2:30 pm		

* Smith, T.M., and R.L. Smith. 2012. Elements of ecology. 8th Edition. Benjamin Cummings, Boston.

NRES 151 – Tentative Laboratory Schedule
Spring 2020

A detailed lab syllabus will be distributed by each lab instructor at your first class meeting.

Dates	Topic	Location
Jan 20-24	NO LAB	
Jan 27-31	Introduction to lab. Set up greenhouse competition study.	Meet in lab
Feb 3-7	Library exercise	Meet in lab/Library
Feb 10-14	Population Growth and wolves of Isle Royale	COMPUTER LAB Meet in lab first
Feb 17-21	Species concept and Squirrel Mapper	Lab/ COMPUTER LAB
Feb 24-28	Foraging Behavior	Health Enhancement Center (HEC)
Mar 2-6	Keystone Predator	COMPUTER LAB Meet in lab first
Mar 9-13	Succession: Intermediate Disturbance Hypothesis	COMPUTER LAB Meet in lab first
SPRING BREAK		
Mar 23-27	Conclude greenhouse experiment. Graphing in Excel	Meet in lab/COMPUTER LAB
Mar 30-Apr 3	Community structure. Field trip to Schmeckle Reserve	FIELD TRIP
Apr 6-10	Sampling vegetation and litter invertebrates.	FIELD TRIP
Apr 13-17	Data analysis and interpretation of biotic diversity	Meet in lab
Apr 20-24	Biotic index for assessing water quality of Plover River.	FIELD TRIP
Apr 27- May 1	Data analysis and interpretation of aquatic invertebrates.	Meet in lab
May 4-8	Review. Laboratory final exam.	Meet in lab

Section	Time	Day	Room	Tentative Instructor
Sec 4	10:00-11:50	Mon	CNR 153	Matthew Hannenman
Sec 7	13:00-14:50	Mon	CNR 153	Ross McLean
Sec 1	8:00-9:50	Tues	CNR 153	Dr. Diane Lueck
Sec 9	14:00-15:50	Tues	CNR 153	Sophie Demchik
Sec 5	10:00-11:50	Wed	CNR 153	Sophie Demchik
Sec 8	13:00-14:50	Wed	CNR 153	Sophie Demchik
Sec 10	15:00-17:00	Wed	CNR 153	TBD
Sec 3	9:00-10:50	Thurs	CNR 153	Ross McLean
Sec 2	8:00-9:50	Fri	CNR 153	Sabine Berzins
Sec 6	10:00-11:50	Fri	CNR 153	Ross McLean