

# NRES 151 - Ecological Basis for Natural Resource Management

Course Information - Spring 2019

**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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Dr. Les Werner, Forestry  
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**Lab staff:** Ms. Sophie Demchik  
Ms. Janel Scharhag  
Mr. Jered Studinski

Ms. Kara White  
Mr. Ross McLean

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

LECTURE (60%)	LAB (40%)
Exam I .....30%	Reports .....20%
Exam II .....30%	Library exercise.....5%
	Lab final .....15%

**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 lead to a number of problems in the course (see **Attendance** below). We will post a skeletal version of our PowerPoint notes prior to lectures in D2L, 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 2019

<b>Date</b>	<b>Topic</b>	<b>Text*</b>	<b>Lecturer</b>
T Jan 22	<b>Introduction.</b> Key concepts and principles	Pages 1-14	Riddle
Th Jan 24	<b>Species.</b> Population growth and carrying capacity	Pages 165-178; 198-199; 202-220	Riddle
T Jan 29	<b>Species.</b> Population growth and carrying capacity	Pages 165-178; 198-199; 202-220	Riddle
Th Jan 31	<b>Species.</b> Population growth and carrying capacity	Pages 165-178; 198-199; 202-220	Riddle
T Feb 5	Natural selection and fitness	Pages 70-90	Riddle
Th Feb 7	Natural selection and fitness	Pages 70-90	Riddle
T Feb 12	Abiotic adaptations	Pages 120-145	Riddle
Th Feb 14	<b>Co-evolution</b> (biotic relationships): Predation	Pages 274-289	Riddle
T Feb 19	Predation	Pages 274-289	Riddle
Th Feb 21	Herbivory	Pages 289-295	Riddle
T Feb 26	Herbivory	Pages 289-295	Riddle
Th Feb 28	Competition	Pages 239-249; 252-270	Riddle
T Mar 5	Parasitism	Pages 299-305	Riddle
Th Mar 7	Parasitism	Pages 299-305	Riddle
T Mar 12	Mutualism	Pages 305-315	Riddle
Th Mar 14	<b>EXAM 1</b>		
<b>SPRING BREAK</b>			
T Mar 26	Exam I Review.		
Th Mar 28	<b>Ecosystems:</b> Ecosystem development: primary succession	Pages 353-367; 19-32	Werner
T Apr 2	Ecosystem development: primary succession	Pages 353-367	Werner
Th Apr 4	Ecosystem development: primary succession	Pages 353-367	Werner
T Apr 9	Ecosystem development: primary succession	Pages 353-367	Werner
Th Apr 11	Ecosystem development: secondary succession	Pages 353-367	Werner
T Apr 16	Ecosystem development: secondary succession	Pages 353-367	Werner
Th Apr 18	Ecosystem development: secondary succession	Pages 353-367	Werner
T Apr 23	Ecosystem development: succession and soil development	Pages 57-63	Werner
Th Apr 25	Ecosystem development: succession and soil development	Pages 57-63	Werner
T Apr 30	Ecosystem development: succession and soil development	Pages 57-63	Werner
Th May 2	Energy Transfer and Biogeochemical Cycling	Pages 419-438	Werner
T May 7	Energy Transfer and Biogeochemical Cycling	Pages 397-40	Werner
Th May 9	Energy Transfer and Biogeochemical Cycling	Pages 403-417	Werner
W May 15	<b>FINAL EXAM –Rm 170 CNR – 8:00 am 10:00 am</b>		

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

**NRES 151 – Tentative Laboratory Schedule**  
Spring 2019

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

Dates	Topic	Location
Jan 21-25	NO LAB	
Jan 28-Feb 1	Introduction to lab. Set up greenhouse competition study.	Meet in lab
Feb 4-8	Library exercise	Meet in lab/Library
Feb 11-15	Population Growth and wolves of Isle Royale	COMPUTER LAB Meet in lab first
Feb 18-22	Species concept and Squirrel Mapper	Lab/ COMPUTER LAB
Feb 25-Mar 1	Foraging Behavior	Health Enhancement Center (HEC)
Mar 4-8	Keystone Predator	COMPUTER LAB Meet in lab first
Mar 11-15	Succession: Intermediate Disturbance Hypothesis	COMPUTER LAB Meet in lab first
<b>SPRING BREAK</b>		
Mar 25-29	Conclude greenhouse experiment. Graphing in Excel	Meet in lab/COMPUTER LAB
Apr 1-5	Community structure. Field trip to Schmeckle Reserve	FIELD TRIP
Apr 8-12	Sampling vegetation and litter invertebrates.	FIELD TRIP
Apr 15-19	Data analysis and interpretation of biotic diversity	Meet in lab
Apr 22-26	Biotic index for assessing water quality of Plover River.	FIELD TRIP
Apr 29- May 3	Data analysis and interpretation of aquatic invertebrates.	Meet in lab
May 6-10	Review. <b>Laboratory final exam.</b>	Meet in lab

Section	Time	Day	Room	Tentative Instructor
Sec 4	10:00-11:50	Mon	CNR 252	Kara White
Sec 7	13:00-14:50	Mon	CNR 252	Sophie Demchik
Sec 1	8:00-9:50	Tues	CNR 252	Janel Scharhag
Sec 9	14:00-15:50	Tues	CNR 252	Jered Studinski
Sec 5	10:00-11:50	Wed	CNR 252	Sophie Demchik
Sec 8	13:00-14:50	Wed	CNR 252	Jered Studinski
Sec 3	9:00-10:50	Thurs	CNR 252	Ross McLean
Sec 2	8:00-9:50	Fri	CNR 252	Sophie Demchik
Sec 6	10:00-11:50	Fri	CNR 252	Sophie Demchik