

ESCI 325 FUNDAMENTALS OF ECOLOGY (3 cr.)
Huxley College of the Environment
Western Washington University
Fall 2017

Instructor:	James M. Helfield	Claire Walli (TA)
Office:	ES 338	ES 328
Tel:	650-7285	
Email:	james.helfield@wwu.edu	wallic@wwu.edu
Office hrs:	by appt.	by appt.

Lectures: MWF 10:00 – 10:50 am, HH 153

Course Objectives:

Ecology is the study of how organisms interact with their physical environment and with each other. The primary objective of this course is to provide students with an understanding of the fundamental concepts of ecology and the ways in which physical, chemical and biological factors interact to shape the structure and dynamics of terrestrial and aquatic ecosystems. Another goal is to help students become informed, critical thinkers able to interpret the results of scientific studies and use theoretical knowledge to address environmental issues affecting society.

Prerequisites:

BIOL 204, BIOL 205 and BIOL 206; CHEM 121, CHEM 122 and CHEM 123.

Readings and Course Materials:

The recommended textbook for this course is *Ecology (2nd Edition)*, by M.L. Cain, W.D. Bowman, and S.D. Hacker, published by Sinauer Associates. Supplemental readings and other course materials can be downloaded from the [ESCI 325 Canvas site](#).

Assignments and Grading:

Final grades will be based on the following:

Assignment 1	5%
Assignment 2	10%
Assignment 3	10%
Midterm Exam 1	25%
Midterm Exam 2	25%
Final Exam	25%
Total:	100%

Late assignments will be penalized 5% per day if turned in without a valid excuse. Students who miss a test without a valid excuse will be given a grade of 0% for that test. If you have a valid excuse for missing a deadline or a test, you should contact the instructor beforehand so that alternate arrangements can be made.

Letter grades will be assigned as follows:

Grade	%	Grade	%	Grade	%	Grade	%	Grade	%
		B+	87 – 89.9	C+	77 – 79.9	D+	67 – 69.9	F	0 – 59.9
A	93 – 100	B	83 – 86.9	C	73 – 76.9	D	63 – 66.9		
A-	90 – 92.9	B-	80 – 82.9	C-	70 – 72.9	D-	60 – 62.9		

Schedule:

<i>Week</i>	<i>Date</i>	<i>Topic</i>	<i>Readings</i>
1	W 9/27	<i>SECTION I: INTRODUCTION</i> Introduction to the Course: What is Ecology?; Citing peer-reviewed sources; Assgn. 1	
	F 9/29	Climate and Biomes	Cain Chs. 2&3
2	M 10/2	<i>SECTION II: ORGANISMAL ECOLOGY</i> Evolution and Natural Selection	Cain Ch. 6
	W 10/4	Evolution and Natural Selection (cont'd)	
	F 10/6	Temperature Regulation; ASSGN. 1 DUE	Cain Ch. 4
3	M 10/9	Water Regulation	Cain Ch. 4
	W 10/11	Energy and Nutrient Resources	Cain Ch. 5
	F 10/13	Energy and Nutrient Resources (cont'd)	
4	M 10/16	MIDTERM EXAM 1	
	W 10/18	<i>SECTION III: POPULATION ECOLOGY:</i> Distribution and Abundance	Cain Ch. 8
	F 10/20	Population Dynamics	Cain Ch. 10
5	M 10/23	Population Dynamics (cont'd); Population Growth; Assgn. 2	Cain Ch. 9
	W 10/25	Life History Strategies	Cain Ch. 7
	F 10/27	<i>SECTION IV: COMMUNITY ECOLOGY</i> Competition and Niches	Cain Ch. 11
6	M 10/30	Exploitation: Herbivory, Predation, Parasitism and Disease	Chs. 12&13
	W 11/1	Exploitation (cont'd); ASSGN. 2 DUE	
	F 11/3	no class (snow day)	
7	M 11/6	Symbiosis	Cain Ch. 14
	W 11/8	MIDTERM EXAM 2	
	F 11/10	no class (Veterans Day)	
8	M 11/13	Biodiversity; Assgn. 3	Cain Chs. 15&18
	W 11/15	Food Webs	Cain Ch. 20
	F 11/17	<i>SECTION V: ECOSYSTEM ECOLOGY</i> Primary Production and Energy Flux	Cain Ch. 19
9	M 11/20	Nutrient Cycling; ASSGN. 3 DUE	Cain Ch. 21
	W 11/22	no class (Thanksgiving)	
	F 11/24	no class (Thanksgiving)	
10	M 11/27	Salmon, Bear and Riparian Forests: A Keystone Mutualism?	Helfield and Naiman 2006
	W 11/29	Disturbance and Succession	Cain Ch. 16
	F 12/1	Island Biogeography	Cain Ch. 17
Dead	M 12/4	Climate Change, Humans and Extinction	Cain Ch. 24
	W 12/6	Loose Ends	
	F 12/8	Summary and Review	
Finals	T 12/12	FINAL EXAM 10:30 am – 12:30 pm	