

Ecology
PCB 4043

Instructor

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Lecture: Tues. Thurs. 8:30-9:45
Laboratory: Tues 13:00-17:00
Wed. 13:00-17:00
Fri. 13:00-17:00
Office Hours: Tues. 9:45 - 14:30
Thurs. 9:45 - 12:45
(or just stop by anytime)

Lab Instructors: Austin Dixon (Tuesday) akd10@students.uwf.edu
Cinnamon Morrison (Wednesday) cm62@students.uwf.edu
Evan Wheeler (Friday) eaw23@students.uwf.edu

Text: Smith & Smith, 2001. *Ecology and Field Biology*, 6th ed., Benjamin Cummings.
Recommended but not required:
Pechenik, J.A. 2007. *A short guide to writing about biology*, 6th ed. Pearson Longman

Assistance

If you have need of any in-class accommodations or special test-taking arrangements because of physical, and/or perceptual limitations, contact the instructor or department secretary (474-2748).

Attendance

Conflicts with exam or laboratory scheduling must be taken care of in advance for non-emergency situations. Material or sessions missed for emergency or excused absences must be made up at the convenience of the instructor and teaching assistants.

Lecture. Attendance at lectures is not mandatory. However, lectures will not be restricted to the text material. Bottom line: absences will probably adversely affect your grade.

Laboratory: Attendance at laboratory meetings and field trips is mandatory.

How you will be Graded

Lecture (1200 points total). Four exams (275 points each) and random quizzes (100 pts).

Lab (400 points total). Quizzes will be given at the beginning of each lab period (100 points). A lab report in scientific technical writing style is required, submitted once for grading and editing (50 points) and submitted a second time for improvements (50 points). Two lab practical exams are worth 100 points each. An additional 25 points extra credit is possible for a plant collection/field journal.

The Fine Print.

The course total for absolute perfection is 1600 points.

Letter Grades will be assigned based on a percentage of total points, with 75% a "C", > 90% required for an "A"

Plus-minuses only given for Cs and Bs.

Lecture schedule is subject to change.

Course Withdrawal

The last day to withdrawal with an automatic “W” is 16 Mar 2012

Course Objectives and Student Learning Outcomes:

This course meets the following programmatic goals for the B.S. Biology and Marine Biology programs:

- **Communication:**
 - **Students will collect data in the field and develop mathematic models to describe distribution and abundance of organisms. This analysis will be reported in a scientific paper following the technical writing style found in the scientific literature.**

Fulfillment of this goal will be assessed by grading these papers for data analysis, evaluation, reporting. Grading will reflect ability to convey information about scientific phenomena and adherence to a technical writing style.

Lecture Schedule

#	Day	Date	Subject	Book Pages
Part I. Introduction				
1	Tues	10 Jan	Scope of Ecological Science	1-18
Part II. Abiotic Factors of the Environment				
2	Thurs	12 Jan	Climate	19-41
3	Tues.	17 Jan	The Physical Environment and Soils	42-77
4	Thurs	19 Jan	The Physical Environment and Soils	42-77
Part III. Adaptation to Abiotic Factors: Physiological Ecology				
5	Tues.	24 Jan	Plant adaptations	79-119
6	Thurs	26 Jan	Animal Adaptations	120-144
	Tues.	31 Jan	Animal Adaptations	120-144
7	Thurs	2 Feb	EXAM I	
Part IV. Population Ecology				
8	Tues.	7 Feb	Population Organization and Structure	159-180
9	Thurs	9 Feb	Population Growth	181-193
10	Tues.	14 Feb	Population Regulation	194-213
11	Thurs	16 Feb	Life History Patterns	214-239
12	Tues.	21 Feb	Population Genetics (Part VI in book)	356-380
13	Thurs	23 Feb	Population Genetics (Part VI in book)	356-380
14	Tues.	28 Feb	Predation and Herbivory	264-305
15	Thurs	1 Mar	EXAM II	
Part V. Population Interactions				
16	Tues.	6 Mar	Predation and Herbivory	264-305
17	Thurs	8 Mar	Parasitism and Mutualism	
18	Tues.	13 Mar	Competition	
19	Thurs	15 Mar	Renewable Resource Management	306-334
	19-23 Mar		Spring Break	
Part VII. Community Ecology				
20	Tues.	27 Mar	Community Structure	381-402
21	Thurs	29 Mar	Community Dynamics	403-448
22	Tues.	3 Apr	Landscape Ecology	449-476
23	Thurs	5 Apr	Exam III	
24	Tues.	10 Apr	Biological and Ecosystem Energetics	478-503
Part VIII. Ecosystem Ecology				
26	Thurs	12 Apr	Biological and Ecosystem Energetics	478-503
27	Tues.	17 Apr	Biogeochemical Cycles	504-523
28	Thurs	19 Apr	Global Environmental Change	699-720
29	Tues.	24 Apr	Pollution	
30	Thurs	26 Apr	Pollution	
	Tues.	1 May	FINAL EXAM 8:30 – 11:00	

Week of	Subject	Reading	Notes
9-Jan	Maps, Charts, Remote Sensing	Mumby, P.J. et al., 1997. Measurement of sea grass standing crop using satellite and digital airborne remote sensing. <i>Mar. Ecol. Prog. Ser.</i> 159:51-60.	Outside Bldg 58
16-Jan	Taxonomy, Evolutionary Adaptations	Stiassy, Melanie and Axel Meyer. 1999. Chichlids of the Rift Lakes. <i>Scientific American</i> Feb. 1999: 64-69.	
23-Jan	Water Quality	Meeroff, Daniel E; Bloetscher, Frederick; Bocca, Thais; Morin, Frederic. 2008. Evaluation of Water Quality Impacts of On-site Treatment and Disposal Systems on Urban Coastal Waters. <i>Water, Air, Soil Pollut.</i> 192:11-24.	Water sampling, Lab tour
30-Jan	Lab Projects, Data Analysis and Report Writing	Schmitz, O.J. 2008. Effects of predator hunting mode on grassland ecosystem function. <i>Science</i> 319:952-954.	
6-Feb	Upland Forest Communities: Sandhill Pines	Glitzensein, J.S., W.J. Platt, & D.R. Streng. 1995. Effects of fire regime and habitat on tree dynamics in North Florida longleaf pine savannas. <i>Ecological Monographs</i> 65:441-476.	Short Hike, briars
13-Feb	Upland Forest Communities: Mesic Hardwoods	Ecosystems of Florida Chapter 7: Temperate Hardwood Forests (pages 194 - 196 & 213 - 229)	2 mile hike, briars
20-Feb	Freshwater Wetlands	Ecosystems of Florida Chapter 9 Swamps (pages 281 – 285 & 296 - 312)	Short hike, Papers Due
27-Feb	Practical I		
5-Mar	Barrier Island	Ecosystems of Florida Chapter 13: Dunes and Maritime Forests (pages 429 – 434 & 455 – 480)	1 mile hike, briars, cactus
12-Mar	Co-action Predation	Marko, P.B. & R. Palmer. 1991. Responses of a rocky shore gastropod to the effluents of predatory and non-predatory crabs: avoidance and attraction. <i>Biol. Bull.</i> 181:363-370.	Papers Returned
19-Mar	Spring Break	No Labs	
26-Mar	Wet Prairies	Folkerts, G., 1982. The Gulf Coast pitcher plant bogs. <i>American Scientist.</i> 70: 260-267.	Wet, Short hike
2-Apr	Salt Marsh	Henry, R.P., McBride, C.J. & Williams, A.H. 1993. Responses of the marsh periwinkle, <i>Littoraria (Littorina) irrorata</i> to temperature, salinity, and desiccation, and the potential physiological relationship to climbing behavior. <i>Mar. Behav. Physiol.</i> 24:45-54.	Wet, Muddy
9-Apr	Seagrasses	Francovich, T.A. & J.W. Eleutrius. 1997. Seagrass epiphyte loads along a nutrient availability gradient, Florida Bay, USA. <i>Mar. Ecol. Prog. Ser.</i> 159:37-50	Wet, Papers Due
16-Apr	Make up days/review		
23-Apr	Practical II		Herbarium Journal Due