

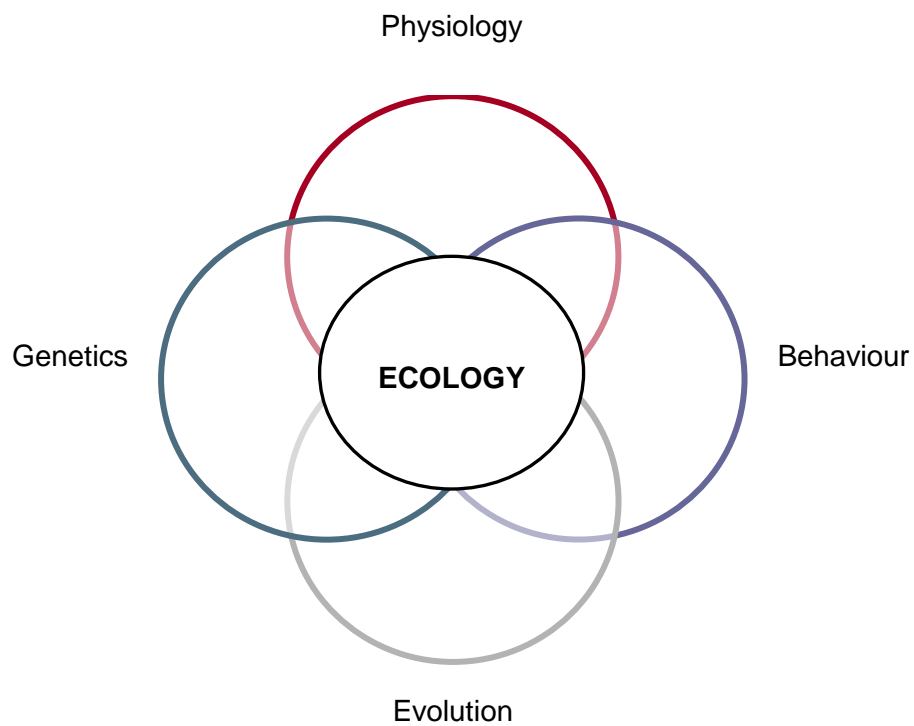
Biology 228

ECOLOGY

Course Outline and Schedule

Winter 2008

Instructor: Dr. David Blundon



COURSE MATERIALS

Lectures: see schedule

Textbook:

Molles, M.C. and J.F. Cahill, 2008. Ecology: Concepts and Applications. Canadian ed., McGraw-Hill, Toronto.

Laboratory Exercises:

- 1. Statistical Analysis of Sampling Data**
- 2. Ordered Distance Sampling**
- 3. Germination and Establishment Experiment**
- 4. Mark-Recapture Sampling Method**
- 5. Population Growth of *Lemna***
- 6. Niche Measures and Resource Preferences**

Ancillaries:

Statistics Review

Statistical Tables

Writing Lab Reports

Statistical Analysis of ANOVA

**All lectures and laboratory information is available online from D2L.
You are expected to print lab material as needed and attendance is
compulsory (see below).**

Evaluation W2008

CONTENT	PERCENT	DUE DATE
Lecture Midterm	10%	February 25
Lecture Final	30%	Final Exam schedule
Lab Assignments	15%	
Assignment I (Statistical Analysis)		January 22
Assignment II (Mark-recapture)		March 4
Assignment III (Niche Overlap)		March 25
Lab Exam	10%	April 8
Presentation	10%	TBA
Lab Reports	25%	
Report I (Line Intercept)		January 29
Report II (Germination Experiment)		February 19
Report III (<i>Lemna</i>)		April 1

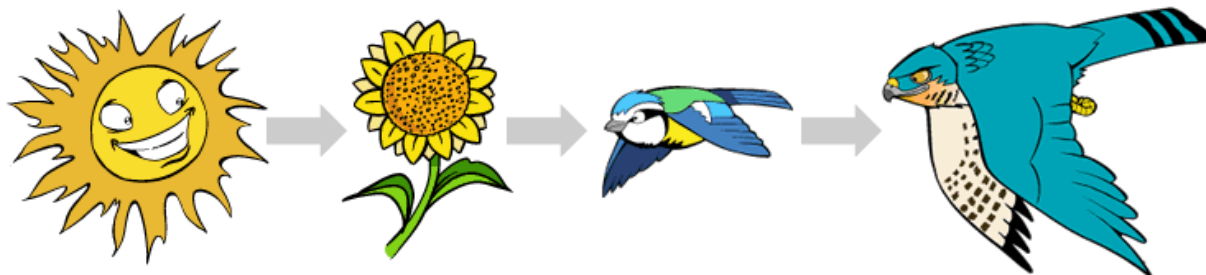
Lab attendance will be taken - five percent (5%) will be deducted from your final lab grade for lab missed. Medical circumstances are exempt.

Plagiarism is unacceptable – all involved will receive zero, five percent (5%) will also be deducted from your final grade and a meeting with the Chair will be arranged.

Plagiarism refers to text that you write; however, you are encouraged to work collaboratively in the lab and on the arithmetic problems.

Make arrangements so that there are no conflicts with the scheduled tests time of the midterm and final exams.

Letter Grades:	A+	90-100%	A	85-89%	A-	80-84%
	B+	77-79%	B	73-76%	B-	70-72%
	C+	65-69%	C	60-64%	D	50-59%
	F	<50%				



COURSE SCHEDULE

Week	Date	Lecture Topic	Lab/Data
1	Jan. 7 - 11	Introduction	Statistical Analysis
2	Jan. 14 - 18	Scientific Method	Ordered Distance Sampling (Haro Woods)
3	Jan. 21 - 25	Terrestrial	Set-up Germination Experiment and <i>Lemna</i> Labs (Week 0) Ordered Distance Sampling (discuss) Assignment I: Statistical Analysis due
4	Jan 28 - Feb. 1	High Elevation	Germination Expt (first count) <i>Lemna</i> count (Week 1) Report I: Ordered Distance Sampling due 6 Presentations
5	Feb. 4 - 8	Aquatic	Germination Expt (final count) <i>Lemna</i> count (Week 2) 6 Presentations
6	Feb. 11-13 Feb. 14 - 15	Water Relations Reading Break	Germination count (discuss) <i>Lemna</i> count (Week 3) 6 Presentations
7	Feb. 18 - 22	Energy, Niche	<i>Lemna</i> count (Week 4) Mark-recapture Lab Report II: Germination Experiment due
8	Feb. 25 - 29	Lecture Midterm Herbivory, Parasitism	<i>Lemna</i> count (Week 5) Mark-recapture Lab (discuss)
9	March 3 - 7	Distribution and Abundance.	<i>Lemna</i> count (Week 6) <i>Lemna</i> (discuss) Assignment II: Mark-recapture due 3 Presentations
10	March 10 - 14	Population Growth	<i>Lemna</i> count (Week 7) Niche Overlap Lab
11	Mar. 17 – 20 March 21	Competition College Closed	<i>Lemna</i> count (Week 8 – final count) Niche Overlap Lab (discuss) 3 Presentations
12	March 24 March 25 - 28	College Closed Mutualism, Predation	<i>Lemna</i> count (discuss) Assignment III: Niche overlap due 3 Presentations
13	March 31 - April 4	Community Structure College closed	Lab Exam (discuss) Report III: <i>Lemna</i> due
14	April 7 - 11	Succession	Lab Exam
	Apr. 14 - 22	Final Lecture Exam - scheduled in Exam Period	

GENERAL COMMENTS ABOUT THE SUBJECT OF ECOLOGY AND THIS COURSE

Ecology is the science dealing with the study of the interactions that determines the distribution and abundance of organisms. Ecologists deal with the structure and dynamics of systems that consist of organisms in their biotic and abiotic environments. The particular system studied by an ecologist depends on the level of organization or complexity of interest. These levels of complexity increase from the individual and its immediate environment, to the population, then to the community, and finally to the ecosystem level.

Historically ecology was purely descriptive. From descriptive ecology have come techniques to assess the physical and chemical factors that affect an organism, along with qualitative and quantitative techniques for describing individuals, populations and communities. Modern ecology is an empirical and experimentally based science attempting to answer ecological questions using sampling and analytical techniques. The study of ecology has become more rigorous in approach and more strongly oriented toward the testing of hypotheses. That is, ecological hypotheses ask why something happened and not just what happened. In order to go beyond merely counting of organisms, quantitative methods and techniques of mathematical and statistical analysis have gained prominence. Computer simulations and analyses are now the tools used to apply this hypothesis-testing approach to the most complex levels of ecological organization. As in all ecological work, it is important to think before you leap into analysis.

The exercises in this laboratory manual emphasize quantitative methods that are frequently used in ecology. This manual is meant to stand alone and complement the lecture portion of the course. Biology 228 is a general survey course and attempts to provide a balanced approach emphasizing a common body of theory and technique existing in ecology.

NAME: Dr. David Blundon

Office: F352

Phone: 3220

Term: Winter 2008

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:30-9:20					
9:30-10:20	ENVR 211 X01 P111	BIOL 228 001A Lab F238	ENVR 211 F222	ENVR 211 Lab F222 (weeks 1 - 7)	ENVR 215 WT226 X01A/B (weeks 8 - 14)
10:30-11:20			ENVR 215 F216 X01A/B		
11:30-12:20	OFFICE HOUR				
12:30-1:20	BIOL 228 001A/B Y211	ENVR 208 LMC 136	BIOL 228 001A/B Y211	ENVR 215 X01B Lab (10:30 - 12:50)	BIOL 228 001A/B F200
1:30-2:20	ENVR 226 X01 F222 (weeks 8 - 14)				
2:30-3:20			ENVR 226 Lab F244 (weeks 8 - 14)	ENVR 215 X01A Lab F244 (weeks 8 - 14)	OFFICE HOUR
3:30-4:20	OFFICE HOUR	BIOL 228 001B Lab F238			
4:30-5:20					
5:30-6:20					
6:30-7:20					