

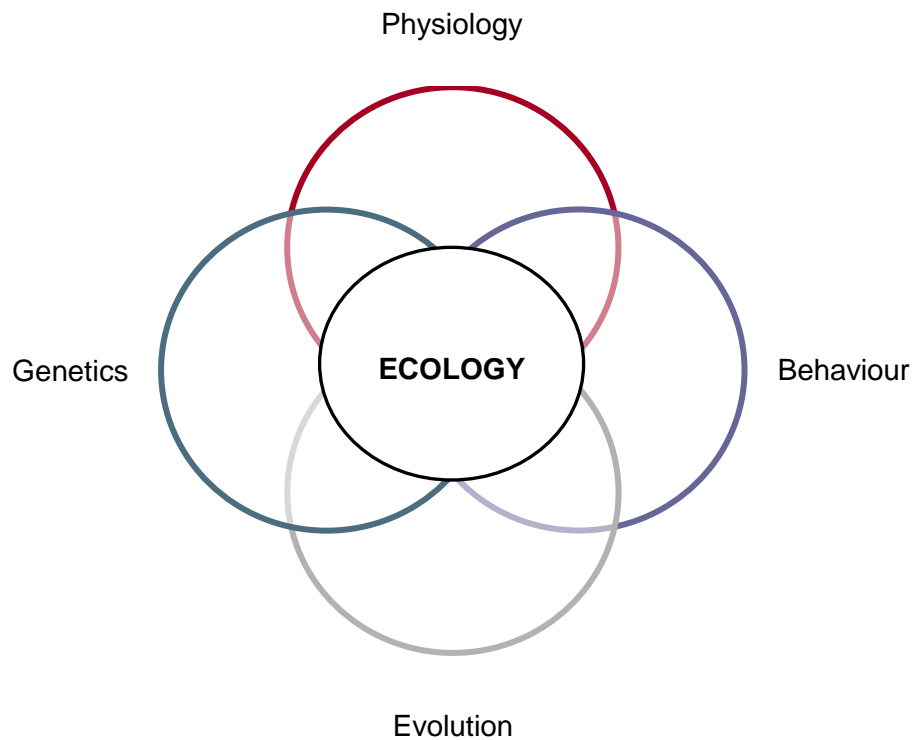
Biology 228

ECOLOGY

Course Outline and Schedule

Fall 2010

Instructor: Dr. David Blundon



COURSE MATERIALS

Lectures: see schedule

Textbook:

Ecology: A Canadian Context by Freedman *et al*, 1st edition 2011, Nelson Education Ltd.

Laboratory Exercises:

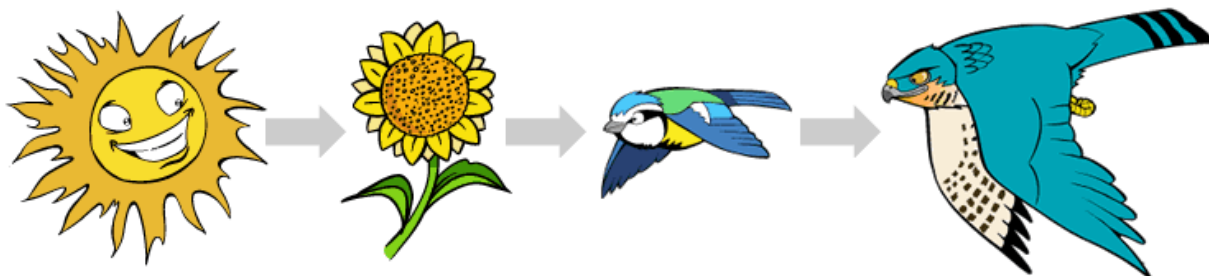
1. Statistical Analysis of Sampling Data
2. Ordered Distance Sampling
3. Germination and Establishment
4. Mark-Recapture Sampling Method
5. Population Growth of *Lemna*
6. Niche Measures and Resource Preferences

Ancillaries:

Statistics Review

EXCEL and MINITAB Statistical Analysis

Statistical Tables



Evaluation F2010

CONTENT	PERCENT	DUE DATE
Lecture Midterm	20%	October 29
Lecture Final	35%	Final Exam schedule
Assignments	35%	
Assignment I (Statistical Analysis)		October 1
Assignment II (Haro Woods)		October 21
Assignment IV (Mark-recapture)		November 5
Assignment III (Germination Experiment)		November 12
Assignment VI (<i>Lemna</i> Population Growth)		November 19
Assignment V (Niche Overlap)		November 26
Lab Exam	10%	Week 14 (Dec 6 & 8)

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%				

F2010 COURSE SCHEDULE

Weeks	Dates	Lecture Topics	Lab Topics
1	Sept. 8 - 10	Introduction	NO LAB
2	Sept. 13 - 17	Environmental Factors	Set up <i>Lemna</i> Population Lab Statistical Analysis Lab
3	Sept. 20 - 24	Energetics	<i>Lemna</i> count (first count) Esquimalt Lagoon Field Study (Transect Sampling)
4	Sept. 27 – Oct. 1	Nutrient Cycling	<i>Lemna</i> count (second count) Esquimalt Lagoon Field Study (continued) Assignment I: Statistical Analysis due
5	Oct. 4 – 8	Populations	<i>Lemna</i> count (third count) Haro Woods Field Study (Ordered Distance Sampling)
6	Oct. 11 (Mon)	College Closed	NO LAB
	Oct. 12 - 115	Behavioural	<i>Lemna</i> count (fourth count)
7	Oct. 17 - 21	Physiological	<i>Lemna</i> count (fifth count) Set-up Germination Experiment Assignment II: Haro Woods due
8	Oct. 25 - 29	Life Histories Lecture Midterm	<i>Lemna</i> count (sixth count) Germination Expt (first count) Mark-recapture Lab
9	Nov. 1 - 5	Communities	<i>Lemna</i> count (seventh count) Germination Expt (final count) Assignment III: Mark-recapture due
10	Nov. 8 – 12	Disturbance	<i>Lemna</i> count (final count) Niche Overlap Lab
	Nov. 11 (Thurs)	College Closed	Assignment IV: Germination Experiment due
11	Nov. 15- 19	Succession	Assignment V: <i>Lemna</i> due
12	Nov. 22 - 26	Biomes	Assignment VI: Niche overlap due
13	Nov. 29 – Dec. 3	Landscapes	Lab Exam (discuss)
14	Dec. 6 - 10	Conservation	Lab Exam
15	Dec 13 - 17	Final Lecture Exam – posted in October	

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.

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Term: Fall 2010

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:30-9:20					
9:30-10:20		ENVR 246 X01 Lec F222			
10:30-11:20	BIOL 228 001A Lab F244				
11:30-12:20		OFFICE HOUR			OFFICE HOUR
12:30-1:20		OFFICE HOUR	BIOL 228 001A/B/C Y216	BIOL 228 001A/B/C Y216	BIOL 228 001A/B/C Y216
1:30-2:20			OFFICE HOUR	ENVR 246 X01 Lab F244	OFFICE HOUR
2:30-3:20	BIOL 228 001B Lab F244		BIOL 228 001C Lab F224		
3:30-4:20					
4:30-5:20					
5:30-6:20					
6:30-7:20					
7:30-8:20					
8:30-9:20					