



COURSE OUTLINE

The course description is online @ <http://camosun.ca/learn/calendar/current/web/envr.html>

Ω Please note: the College electronically stores this outline for five (5) years only.
 It is **strongly recommended** you keep a copy of this outline with your academic records.
 You will need this outline for any future application/s for transfer credit/s to other colleges/universities.

1. Instructor Information

(a)	Instructor:	Dr. David Blundon		
(b)	Office Hours:	see below		
(c)	Location:	F-246		
(d)	Phone:	250 350-3984	Alternative Phone:	
(e)	Email:	blundond@camosun.bc.ca		
(f)	Website:			

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:30-9:20			ENVR 246 001 Lec E344	ENVR 229 001A/B Lec E201		
9:30-10:20						
10:30-11:20			OFFICE HOUR	OFFICE HOUR		
11:30-12:20			OFFICE HOUR	OFFICE HOUR	OFFICE HOUR	
12:30-1:20						
1:30-2:20						
2:30-3:20		ENVR 229 001B Lab E110		ENVR 246 001 Lab F244	ENVR 229 001A Lab E110	
3:30-4:20						
4:30-5:20						

5:30-6:20						
6:30-7:20						
7:30-8:20						
8:30-9:20						

2. Intended Learning Outcomes

(No changes are to be made to these Intended Learning Outcomes as approved by the Education Council of Camosun College.)

Upon completion of this course the student will be able to:

1. Use a calculator and specialized software to solve statistical problems.
2. Use R statistics to create graphs and perform statistical analysis.
3. Evaluate parametric and non-parametric statistical test results.
4. Describe and compare sampling designs.
5. Describe and compare experimental designs.
6. Identify assumptions and potential violations of specialized analysis.
7. Compare univariate and multivariate analysis of data.
8. Compose sampling and experimental designs for a variety of scenarios.
9. Evaluate sampling and experimental results.
10. Discuss the appropriateness of selected designs and multivariate analysis.
11. Evaluate the results of multivariate analysis.

3. Required Materials

(a) Texts (*student purchase*)

None

(b) Other (provided by the college)

Programs for Ecological Methodology, Version 7.02 by Krebs, C.J. 2009.

PC-ORD Multivariate Analysis of Ecological Data, Version 6.

R statistics (<http://www.r-project.org/>) – download this onto your computer.

Microsoft Excel.

4. Course Content and Schedule

(This section can include: class hours, lab hours, out of class requirements and/or dates for quizzes, exams, lectures, labs, seminars, practicums, etc.)

A. LECTURE TOPICS:

- Introduction to Quantitative Analysis
- Sampling Designs
- Experimental Designs
- R statistics open source program
- Probability Distributions
- Review Of Parametric versus Non-Parametric Statistics
- Anova
- Simple and Multiple Regression
- Multivariate Analysis
- Mark-Recapture Techniques, Removal Methods, Quadrat Counts
- Line Transects and Distance Methods

B. LABORATORY TOPICS AND EXERCISES:

- Population Estimation:
 - Peterson, Schnabel & Jolly-Seber Mark-Recapture Sampling Methods*
 - Catch Effort Methods for Exploited Populations (e.g., Alaska blue-crab)
 - Line Intercept Method (e.g., Coburg Peninsula six-year dataset)
 - Aerial Methods
 - Maximum Likelihood Resight Method
- R script (R help)
- Descriptive Statistics (eg., Boxplot in R)
- Sampling: Random, Stratified, Two-Stage and Composite sampling
- Experimental Design (e.g., Spit-Plot Coburg Peninsula dataset)
- Testing the assumptions of parametric statistics in R (e.g., residual diagnostics plots)
- Parametric and non-parametric two-way Anova in R (e.g., germination dataset from BIOL 228 Ecology)
- Regression Analysis (e.g., western spruce budworm dataset from PFC, Victoria)
- Multivariate Analysis (e.g., R and PC-ORD)

5. Basis of Student Assessment (Weighting)

(This section should be directly linked to the Intended Learning Outcomes.)

Lecture/Lab Exams - 60%

- Exam I - 20% Week 7: Thursday February 19: 2 hours
- Lab Exam - 15% Week 14: Tuesday and Friday Lab Times (April 7 and 10: 3 hours)
- Exam II - 25% Week 15: Exam Period: 3 hours (see posted schedule)

Assignments - 40%

- 10 assignments (TBA)

6. Grading System

(No changes are to be made to this section unless the Approved Course Description has been forwarded through the Education Council of Camosun College for approval.)

Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3
60-64	C		2
50-59	D	Minimum level of achievement for which credit is granted; a course with a "D" grade cannot be used as a prerequisite.	1
0-49	F	Minimum level has not been achieved.	0

Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy E-1.5 at camosun.ca for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	<i>In progress:</i> A temporary grade assigned for courses that, due to design may require a further enrollment in the same course. No more than two IP grades will be assigned for the same course. (For these courses a final grade will be assigned to either the 3 rd course attempt or at the point of course completion.)

CW	<i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.
-----------	---

7. Recommended Materials or Services to Assist Students to Succeed Throughout the Course

LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College calendar, at Student Services, or the College web site at camosun.ca.

STUDENT CONDUCT POLICY

There is a Student Conduct Policy **which includes plagiarism**. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, at Student Services, and the College web site in the Policy Section.

ADDITIONAL COMMENTS AS APPROPRIATE OR AS REQUIRED