

Instructor	Prof James T. Enns Lectures in Henning 200	Email: jenns@psych.ubc.ca
Labs	Buchanan	
01 Fri 1-3 pm	B315 Manlu Liu	Email: manlu.liu@psych.ubc.ca
02 Fri 1-3 pm	B213 Raymond MacNeil	Email: raymond.macneil@psych.ubc.ca
03 Fri 3-5 pm	B213 Sam Good	Email: sam.good@ubc.ca

Course Description

In this course you will become an informed consumer and user of statistical methods. This includes learning how to organize data, performing statistical procedures, planning experiments, and communicating your research in words and print. There are two distinct parts to the course. One deals with the nuts and bolts of statistical analysis and research design; this will be covered in Tuesday-Thursday lectures and the Pagano textbook. A second part deals with the computer-assisted analysis of data sets and the presentation of scientific information; this laboratory component runs in parallel to the lectures. And to reflect this intensity, this course is worth 4 credits (not the usual 3). The Teaching Assistants are entirely responsible for setting and grading your assignments in this portion of the course. More details will be given in the introductory lab sessions.

Approach to Learning

Lectures cover basic statistical concepts and methods. There is much overlap with the textbook, but lecture material is presented from a somewhat different perspective, in order to give optimal opportunity for different learning styles. Lectures and assignments emphasize "active learning." You will be encouraged to ask "what if?" and "let's see how things look differently if we do them this way."

Requirements

Calculator It is your responsibility to bring one to each class and exam. It should have basic memory functions and square/square root functions. You will not be permitted to use devices with outside connectivity (i.e., phones).

Laptop/Tablet We will use some open-source software in class to illustrate ideas. <https://www.jamovi.org/download.html> Please download a version that works on your device and have it available in class. We will not access this software on tests.

Old-fashioned notebook Absolutely essential! In this class we will use paper, you will work on problems by hand on paper, you will create your own notes to be used in exams on paper, you will hand in responses on sheets of paper you tear out of your notebook. You will need paper!

Textbook Understanding Statistics (10th edition or earlier), by R. Pagano

Lab Assignments & Extra Practice

Pagano contains many end-of-chapter homework questions and answers to many of these questions can be found at back of text for quick corrective feedback. Selected portions of these homework

questions will form the basis of lab assignments, where you will learn how to use the [R Language and Environment for Statistical Computing](#) to assist you in the organization, visualization, and analysis of data. To participate in the lab activities and to complete the assignments, you will need to download both [R](#) and [RStudio](#). This is opensource software, and therefore is available at no cost. Although the lab slides and handouts will cover the essentials of R programming and syntax required for the assignments, you may find it helpful to also consult the following open-source reference materials:

- [Learning Statistics with R](#)
- [R for Data Science](#)
- [Hands-On Programming with R](#)

Grading

Lecture Components	
Quizzes (3 @ 15%)	45%
Final Exam	25%
Lab Components	
Written Assignments (7 @ 2%)	14%
Lab Final Exam	16%

Missed Exam and Assignment Policy

Advance Notice is Key! For any absence you must notify me (jenns@psych.ubc.ca) or the Psychology Department office (822-2755) in advance of the deadline. If you show up AFTER a deadline, saying you were sick, you were caring for someone sick, you will receive no credit. Late submission of lab written assignment will receive a 20% penalty per day.

Academic Concession

Please consult the evolving UBC guidelines on academic concession and student self-declaration. <http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,329,0,0#26573>

UBC's Position on Academic Misconduct

Cheating, plagiarism, and other forms of academic misconduct are very serious concerns of the University and the Department of Psychology has taken steps to alleviate them. Strong evidence of cheating or plagiarism may result in a zero credit for the work in question. According to the University Act (section 61), the President of UBC has the right to impose harsher penalties including (but not limited to) a failing grade for the course, suspension from the University, cancellation of scholarships, or a notation added to a student's transcript. All graded work in this course, unless otherwise specified, is to be original work done independently by individuals. If you have any questions as to whether or not what you are doing is even a borderline case of academic misconduct, please consult your instructor. For details on University policies and procedures, please see Student Conduct and Discipline in the UBC Calendar www.calendar.ubc.ca/vancouver/index.cfm?tree=3,54,0,0

LECTURE SCHEDULE (Tue & Thurs 11-12:30)

Week	Chapter	Topic	Date
1	Pagano 3	Introduction, Frequency Distributions	Jan 09-11
2	Pagano 4	Central Tendency, Variability	Jan 16-18
3	Pagano 5	Standard Scores, Normal Distribution	Jan 23-25
4	Quiz 1	Tuesday	Jan 30-
	Pagano 6	Correlation	Feb 01
5	Pagano 7	Regression	Feb 06-08
6		Correlation / Regression	Feb 13-15
----- READING BREAK Feb 19-23 -----			
7	Quiz 2	Tuesday	Feb 27-
	Pagano 10	Hypothesis Testing	Feb 29
8	Pagano 11	Statistical Power	Mar 05-07
9	Pagano 12	Sampling Distributions, z-test	Mar 12-14
10	Quiz 3	Tuesday	Mar 19-
	Pagano 13	t-test single sample	Mar 21
11	Pagano 14	t-test groups	Mar 26-28
12	Pagano 15	Analysis of variance	Apr 02-04
13	Pagano 16	Factorial Analysis of Variance	Apr 09-11
	Final Exam		UBC Schedule TBA

LAB SCHEDULE (Friday 1-3 2x, 3-5 pm)

A total of seven (7) lab assignments + a final lab exam

Lab	Topic	Date
1	Intro to Data Management and R	Jan 12
2	Chaps 3-4 Freq Distributions, Averages & Variance	Jan 19
3	Chap 5 Standard Scores & Normal Distribution	Jan 26
	No Lab since Quiz 1 on Tuesday this week	Feb 02
4	Chaps 6-7 Correlation & Regression	Feb 09
----- READING BREAK Feb 19-23 -----		
	No Lab since Quiz 2 on Tuesday this week	Mar 01
5	Chaps 10-11 Hypothesis Testing and Power	Mar 08
6	Chap 12 Sampling Distributions & z-test	Mar 15
	No lab since Quiz 3 on Tuesday this week	Mar 22
	Good Friday + Easter long weekend	Mar 29
7	Chap 13-14 t-tests, Chap 15-16 ANOVA	Apr 05
	Final Lab Exam	TBA

* Expect the end of year grades to have a mean of 75% and a standard deviation of 11%.

** All grade appeals must be made in writing to the Instructor.