



Course Syllabus

Instructor:	Dr. Younes Alila, P.Eng. Room 2030 – 2424 Main Mall (Forest resources Management Department), Forest Sciences Centre (FSC), 2424 Main Mall younes.alila@ubc.ca
Office Hours:	Fridays, 11:00 AM to 12:00 PM OR by appointment
Teaching Assistants:	Harini Aiyer (Graduate Teaching Assistant) harini.aiyer@ubc.ca Prasun Ghimire (Graduate Teaching Assistant) prasun.ghimire@ubc.ca Daniel O’Beirne (Graduate Teaching Assistant) dobeirne@mail.ubc.ca Sara Savino (Graduate Teaching Assistant) ssavino@mail.ubc.ca
Meeting Times:	Lecture: Tuesday & Thursday, 9:30 am - 11:00 pm, Geography Bldg - Rm:100 Labs: Lab A: Tuesday, 1:00 pm – 3:00 pm, please check CANVAS Lab B: Wednesday, 3:00 pm – 5:00 pm, FSC 1222 Lab C: Thursday, 12:30 pm – 2:30 pm, FSC 2964/2965 Lab D: Thursday, 2:30 pm – 4:30 pm, FSC 1222 Lab E: Friday, 1:00 pm – 3:00 pm, FSC 1222 Drop – In Tutorial: Friday, 4:00 pm – 6:00 pm, FSC 1222

Communications

Students should follow these instructions related to who they should contact for specific purposes. When you look for information related to the course, before contacting the Instructor or GTA (Graduate Teaching Assistant), please make sure to: 1) check the syllabus; 2) check the website (announcements are regularly posted).

If you need to contact the Instructor or GTA, follow this order: 1) ask questions directly during lectures and lab sessions; 2) come to office hours; 3) email the appropriate contact (*only for emergencies and administrative enquires*, **do not** email technical questions as these are better addressed during office hours and lab/lecture sessions).

Drop-In Office hours

The instructor and GTAs will offer weekly scheduled office hours (to be determined). *These office hours are one of the best methods of asking questions related to the course so be sure to take advantage of them!* The rooms and timings for GTA office hours will be announced subsequently.

Written communications can be sent either through the Canvas system or email. If via email, be concise and remember to include the course code and your student number. Also, make sure you know who to contact regarding specific matters:

Contact the lead GTA (Harini Aiyer) regarding: assignment grade enquiries, late assignment penalties, etc.

Contact the Instructors regarding: administrative enquiries, midterm or final exam mark enquiries

All other types of enquiries (namely *technical* enquiries): office hours or lecture/lab sessions (**not** via email)

Course Website:

All the updated and official information relevant to the course is available at the course’s website, hosted by the



Canvas system. To access please go to: <https://canvas.ubc.ca/courses/>

The Canvas course website is restricted so that only registered students can log in through their Campus Wide Login (CWL). Through the website you will be able to check an updated version of the calendar for the entire term, download all the handouts and files required for the course, browse a set of relevant links and read announcements related to the course. The website will be constantly updated and will be **your primary source of official information**. Check <https://canvas.ubc.ca/profile/communication> to confirm that your notification settings are set to “*notify me right away*”, as this is recommended for this course.

Course Objectives:

LFS 252 provides an introduction to quantitative data analysis methods that are needed for economics, ecology, health, and scientific components of land and food systems. Practical real-world examples will be used throughout the course and students will be encouraged to find workable solutions to related problems using the resources and techniques provided in this course.

Learning Outcomes:

The student will practice and learn:

- how to use data to facilitate decision-making in natural sciences
- how to organize, summarize, chart and interpret statistical data;
- how to use probability and counting techniques to determine the likelihood of events occurring;
- how to explain sampling theory and sampling errors;
- how to test for statistical significance by developing hypotheses and constructing confidence intervals for means, proportions and standard deviations;
- how to perform simple analysis of variance and regression techniques, and useful statistical tests (time permitting); and
- how to explain the limitations of all these techniques and when it is appropriate to apply each

<u>Grading Policy:</u>	Labs ⁺ :	30%
	Midterm Exam:	25%
	Final Exam:	45%

+ All lab assignments must be completed with effort and submitted by their respective due dates. Failure to submit all lab assignments will lead to an overall course grade of F (49%) unless the overall grade is already lower than 49%.

Midterm:

There will be **one midterm** completed by all students on a date and time to be announced (during our lecture slot), with clear instructions to be provided in Canvas. The midterm will be closed book, with only formula sheets and calculators allowed. Students will just need a calculator and pencil or pen to complete the midterm.

Students who **skip the midterm** must present a documented valid justification; in which case the midterm exam grade will be allocated to the final exam. Any attendance issues with the final exam must be channeled through *Student Services*.

Final exam:

There will be a **closed book cumulative final exam** completed by all students on a date and time to be announced, with a similar style and approach as the midterm.



Textbooks:

(Current textbook) Diez, David, Mine Çetinkaya-Rundel and Christopher Barr “OpenIntro Statistics: Fourth Edition Paperback”

Free Access: <https://www.openintro.org/book/os/>

Another option for a textbook: **Bluman A.G.**. 2022. *Elementary Statistics: A Step by Step Approach*. **11th Edition**. McGraw-Hill Ryerson. (ISBN: 9781265248123).

Older (US or Canadian) versions of the same textbook can be used at your own risk (the course outline and Canvas course website, particularly section numbers of the reading homework, are all reported according to both OpenIntro, and Bluman 11th edition).

Lectures:

The theoretical background of all statistical techniques will be provided by **in person lectures** which mostly include practical exercises equivalent to those that students solve on their own during labs. Lecture slides will be posted on Canvas.

Laboratories:

Laboratory assignments (approximately 10) are designed to exercise the skills learned in class. A weekly assignment will be explained at the beginning of each lab period and will be **collected for grading at the beginning of the next week lab session**.

Although students are encouraged to work in groups, all assignments will be handed in and graded individually. **Lab attendance is mandatory. If you do not attend a lab, you will not be given a grade for that lab without a valid excuse.** 10% will be deducted per day for late assignments. **You can't pass the course unless you hand in all assignments for grading.**

University policies

• Code of conduct

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result in total loss of points in an assignment, exam or entire course, and will be referred to the President's Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences.

To fully understand what plagiarism means and avoid it please visit: <http://learningcommons.ubc.ca/resource-guides/avoid-plagiarism/>

For a broader guide on general student conduct, go to: <https://students.ubc.ca/campus-life/student-code-conduct>

• Support

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise, so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.



Details of the policies and how to access support are available on the UBC Senate website:
<https://senate.ubc.ca/policies-resources-support-student-success>

- **Copyright**

All materials of this course (course handouts, lecture slides, assessments, course readings, etc.) are the intellectual property of the Course Instructor or licensed to be used in this course by the copyright owner. Redistribution of these materials by any means without permission of the copyright holder(s) constitutes a breach of copyright and may lead to academic discipline. Recording of any event within our class or field activities is not allowed without the consent of the instructor.

Lecture Topics (tentative):

SECTION 1 - INTRODUCTION: (approximately 2 weeks) ***Covered during Dr. Omidvar's lectures***

Introduction
Descriptive Statistics, Inference, Data
Organizing Data, Histograms
Data Description, Central Tendency, Variation

SECTION 2 - PROBABILITY: (approximately 4 weeks) ***Starting February 9th – Covered by Dr. Alila***

Definition of Probability, Calculating Probabilities
Laws of Probability, Addition Rules, Multiplication Rules
Conditional Probability, Bayes' Theorem
Counting Techniques, Tree Diagrams, Permutations, Combinations
Random Variables, Probability Distributions, Expectation
Discrete Distributions

SECTION 3 - STATISTICAL INFERENCE: (approximately 4 weeks)

Normal Distributions, Sampling Distributions, Other Distributions
Central Limit Theorem
Confidence Intervals for Means, Proportions, Differences
Sample Size Determination
Hypothesis Testing for Means, Proportions, Differences and Variances

SECTION 4* – ANALYSIS OF VARIANCE, CORRELATION, REGRESSION: (approximately 2 weeks)

One-Way Analysis of Variance
Correlation and Regression Analysis

*Time permitting only