COURSE OUTLINE

THE UNIVERSITY OF BRITISH COLUMBIA

Department of Computer Science, Mathematics, Physics and Statistics
Okanagan Campus

STAT 230-101 - INTRODUCTORY STATISTICS

INSTRUCTOR

Name: Yas Yamin
Contact: yas.yamin@ubc.ca
Office Location: SCI 238B
Office Hours: Tuesday 14:00-16:00
Class Location: ART 366

SCHEDULE

Lecture: Tuesday and Thursday
Hours: 11:00 - 12:30

LABORATORY COORDINATOR/INSTRUCTOR/TA

LAB	NAME OF TA	DAYS	TIME
L2A	**Yao Chang**	**Monday**	**11:00 - 12:00**
L2C	**Yao Chang**	**Wednesday**	**8:00 - 9:00**
L2E	**Chunlei Ge**	**Friday**	**13:00 - 14:00**
L2F	**Chunlei Ge**	**Wednesday**	**11:00 - 12:00**

All TA's can be contacted on Canvas.

TEXTBOOK AND OTHER REFERENCE MATERIAL

You can find the textbook MathStatBook.pdf on Canvas. The material will be covered by chapter and section as listed in tentative course schedule but the course content may not cover everything in those chapter and sections.

Software: R or R Studio
Homepage: https://www.r-project.org
https://www.rstudio.com

Download page: https://cran.r-project.org
https://www.rstudio.com/products/rstudio/download/

COURSE DESCRIPTION

Course Website:

Course materials are available at https://canvas.ubc.ca.

Academic Calendar Entry:

Applied statistics for students with a first-year calculus background. Estimation and testing of hypotheses, problem formulation, models and basic methods in analysis of variance, linear regression, and non-parametrics. Descriptive statistics and probability are presented as a basis for such procedures.

Prerequisite:

One of MATH 101, MATH 103, MATH 142 and one of DATA 101, COSC 221, ECON 102.

Course Overview:

Applied statistics for students with a first-year calculus background. Estimation and testing of hypotheses, problem formulation, models and basic methods in analysis of variance, linear regression, and non-parametrics. Descriptive statistics and probability are presented as a basis for such procedures.

Learning Outcomes:

At the end of this course, students should be able to:

1. define and differentiate between key terminology and special notation used in statistics;

2. demonstrate their understanding of descriptive statistics by using R to create numerical and graphical data summaries and properly interpreting those results;

3. demonstrate an understanding of basic probability concepts through identifying key distributions, computing basic probabilities, and properly interpreting their numeric value;

4. explain statistical inference concepts, including sampling distributions, confidence intervals, hypothesis tests, and p-values;

5. demonstrate their knowledge of basic statistical inferential by identifying an appropriate statistical procedure in a variety of situations, carrying out the statistical procedure (either “by hand” or using statistical software), and effectively communicating a proper interpretation of the results

Course Objectives:

The course is designed to give students a solid foundation in statistics and present probability as the basis for making decisions. By taking this course, students will be positioned to assess the presence of variability in real-world problems and realize the importance of statistical approaches to decision-making when variability is present. Statistical tools play a vital role in modern day research and data analysis. Consequently, statistical software (particularly R) will be incorporated throughout the course.

Course Format:

The mode of delivery for lectures will be in-person attendance and the labs will be delivered online. Pre-lecture slides will be uploaded before the class, and students are expected to read them first before attending the class. During the class, there will be multiple informal assessments in periodic points in the lecture, where students will be given questions to work on. There will also be graded in-class/in-person quizzes and in-class/in-person exams (see schedule below).

LATE POLICY:

Assignments are due Sunday at 23:59. Except for extreme situations (e.g., illness, childbirth, or bereavement supported by a written proof such as a doctor's note), **late assignment and submissions won't be marked.**

PASSING CRITERIA:

In order to pass the course:

Students MUST receive at least 40% on the final exam AND at least 50% in the lab assignment component to pass the course. Failure to do so will result in a 45% grade, or the resulting grade, whichever is the lowest.

TENTATIVE COURSE SCHEDULE AND REQUIRED READINGS:

See the updated schedule on the Canvas.

EVALUATION CRITERIA AND GRADING:

Assignments/Labs	**20%**
Midterms	**40%**
Final Exam	**40%**

Final grades will be based on the evaluations listed above and the final grade will be assigned according to the standardized grading system outlined in the UBC Okanagan Calendar.

LABORATORY/TUTORIAL MEETING TIMES:

All students must be registered for a lab. Please check your registration to determine your lab section and time. The laboratory time will be spent performing assignments and practice questions to get familiarized to the course in question.

Laboratory sessions will be hosted by your TAs. They are primarily there to provide guidance on the course/lab material, you may work through the lab material on your own time and/or work through them during your scheduled lab. To ensure that TAs are not overloaded during a single lab, please do not attend labs for which you are not registered.

GRADING PRACTICES

Faculties, departments, and schools reserve the right to scale grades in order to maintain equity among sections and conformity to University, faculty, department, or school norms. Students should therefore note that an unofficial grade given by an instructor might be changed by the faculty, department, or school. Grades are not official until they appear on a student's academic record.

http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,41,90,1014

FINAL EXAMINATIONS

The examination period for W2022 is **Monday April 17th, 2023, to Friday April 28th, 2023**. Except in the case of examination clashes and hardships (three or more formal examinations scheduled within a 24-hour period) or unforeseen events, students will be permitted to apply for out-of-time final examinations only if they are representing the University, the province, or the country in a competition or performance; serving in the Canadian military; observing a religious rite; working to support themselves or their family; or caring for a family member. Unforeseen events include (but may not be limited to) the following: ill health or other personal challenges that arise during a term and changes in the requirements of an ongoing job.

Further information on **Academic Concession** can be found under **Policies and Regulation in the *Okanagan Academic Calendar*** http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,48,0,0

ACADEMIC INTEGRITY

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 (i.e., misconduct) 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 a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President's Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences.

A more detailed description of academic integrity, including the University's policies and procedures, may be found in the Academic Calendar at: http://okanagan.students.ubc.ca/calendar/index.cfm?tree=3,54,111,0.

COOPERATION VS. CHEATING

Working with others on assignments is a good way to learn the material and we encourage it. However, there are limits to the degree of cooperation that we will permit. Any level of cooperation beyond what is permitted is considered cheating.

When working on programming assignments, you must work only with others whose understanding of the material is approximately equal to yours. In this situation, working together to find a good approach for solving a programming problem is cooperation; listening while someone dictates a solution is cheating. You must limit collaboration to a high-level discussion of solution strategies, and stop short of actually writing down a group answer. Anything that you hand in, whether it is a written problem or a computer program, must be written by you, from scratch, in your own words. If you base your solution on any other written solution, you are cheating. If you provide your solution for others to use, you are also cheating.

COPYRIGHT DISCLAIMER

Diagrams and figures included in lecture presentations adhere to Copyright Guidelines for UBC Faculty, Staff and Students http://copyright.ubc.ca/requirements/copyright-guidelines/ and UBC Fair Dealing Requirements for Faculty and Staff http://copyright.ubc.ca/requirements/fair-dealing/. Some of these figures and images are subject to copyright and will not be posted to ***Canvas.*** All material uploaded to ***Canvas*** that contain diagrams and figures are used with permission of the publisher; are in the public domain; are licensed by Creative Commons; meet the permitted terms of use of UBC's library license agreements for electronic items; and/or adhere to the UBC Fair Dealing Requirements for Faculty and Staff. Access to the ***Canvas*** course site is limited to students currently registered in this course. Under no circumstance are students permitted to provide any other person with means to access this material. Anyone violating these restrictions may be subject to legal action. Permission to electronically record any course materials must be granted by the instructor. Distribution of this material to a third party is forbidden.

GRIEVANCES AND COMPLAINTS PROCEDURES

A student who has a complaint related to this course should follow the procedures summarized below:

- The student should attempt to resolve the matter with the instructor first. Students may talk first to someone other than the instructor if they do not feel, for whatever reason, that they can directly approach the instructor.
- If the complaint is not resolved to the student's satisfaction, the student should e-mail the Associate Head, Dr. Sylvie Desjardins at sylvie.desjardins@ubc.ca or the Department Head, Dr. John Braun at cmps.depthead@ubc.ca

STUDENT SERVICE RESOURCES

Disability Resource Centre

The Disability Resource Centre ensures educational equity for students with disabilities and chronic medical conditions. If you are disabled, have an injury or illness and require academic accommodations to meet the course objectives, please contact Earllene Roberts, the Diversity Advisor for the Disability Resource Centre located in the University Centre building (UNC 215).

UNC 215 250.807.9263

email: earllene.roberts@ubc.ca

Web: www.students.ok.ubc.ca/drc

Equity and Inclusion Office

Through leadership, vision, and collaborative action, the Equity & Inclusion Office (EIO) develops action strategies in support of efforts to embed equity and inclusion in the daily operations across the campus. The EIO provides education and training from cultivating respectful, inclusive spaces and communities to understanding unconscious/implicit bias and its operation within in campus environments. UBC Policy 3 prohibits discrimination and harassment on the basis of BC's Human Rights Code. If you require assistance related to an issue of equity, educational programs, discrimination or harassment please contact the EIO.

UNC 325H 250.807.9291

email: equity.ubco@ubc.ca

Web: www.equity.ok.ubc.ca

Office of the Ombudsperson for Students

The Office of the Ombudsperson for Students is an independent, confidential and impartial resource to ensure students are treated fairly. The Ombuds Office helps students navigate campus-related fairness concerns. They work with UBC community members individually and at the systemic level to ensure students are treated fairly and can learn, work and live in a fair, equitable and respectful environment. Ombuds helps students gain clarity on UBC policies and procedures, explore options, identify next steps, recommend resources, plan strategies and receive objective feedback to promote constructive problem solving. If you require assistance, please feel free to reach out for more information or to arrange an appointment.

UNC 328 250.807.9818

email: ombuds.office.ok@ubc.ca

Web: www.ombudsoffice.ubc.ca

Sexual Violence Prevention and Response Office (SVPRO)

A safe and confidential place for UBC students, staff and faculty who have experienced sexual violence regardless of when or where it took place. Just want to talk? We are here to listen and help you explore your options. We can help you find a safe place to stay, explain your reporting options (UBC or police), accompany you to the hospital, or support you with academic accommodations. You have the right to choose what happens next. We support your decision, whatever you decide.

Visit svpro.ok.ubc.ca or call us at 250-807-9640.

Independent Investigations Office (IIO)

If you or someone you know has experienced sexual assault or some other form of sexual misconduct by a UBC community member and you want the Independent Investigations Office (IIO) at UBC to investigate, please contact the **IIO**. Investigations are conducted in a trauma informed, confidential and respectful manner in accordance with the principles of procedural fairness.

You can report your experience directly to the **IIO by** calling 604-827-2060.

Web: https://investigationsoffice.ubc.ca/

E-mail: director.of.investigations@ubc.ca

Student Learning Hub

The Student Learning Hub (LIB 237) is your go-to resource for free math, science, writing, and language learning support. The Hub welcomes undergraduate students from all disciplines and year levels to access a range of supports that include **tutoring in math, sciences, languages, and writing, as well as help with study skills and learning strategies**.

For more information, please visit the Hub's website (https://students.ok.ubc.ca/student-learning-hub/) or call 250-807-9185.

Student Wellness

At UBC Okanagan health services to students are provided by Student Wellness. Nurses, physicians and counsellors provide health care and counselling related to physical health, emotional/mental health and sexual/reproductive health concerns. As well, health promotion, education and research activities are provided to the campus community. If you require assistance with your health, please contact Student Wellness for more information or to book an appointment.

UNC 337 250.807.9270

email: healthwellness.okanagan@ubc.ca

Web: www.students.ok.ubc.ca/health-wellness

SAFEWALK

Don't want to walk alone at night? Not too sure how to get somewhere on campus? Call Safewalk at ***250-807-8076.*** *For more information, see:* www.security.ok.ubc.ca