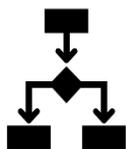


Statistical Sciences 9030B**Statistical Inference****Winter term 2023****Course Outline****1. Course Information****Statistical Sciences 9030B**
Winter term 2023**Lecture Hours:** Monday and Friday 2:00 PM – 3:15 PM, WSC 248

Prerequisite: Students are expected to have taken a course in Mathematical Statistics such as Statistical Sciences 3858B.

2. Instructor Information**Instructor:** Serge Provost, *Ph.D. (McGill)**Office:* WSC 223*Email:* sp@uwo.ca*Phone:* 519-661-3624*Office hours:* As announced in class**Teaching Assistant:** Peiheng Gao; pgao47@uwo.ca

3. Course Syllabus, Schedule, Delivery Mode



Course Description

The following topics will be covered among others: point and interval estimation, transformation of variables, aspects of multivariate statistical analysis, sufficiency, completeness, consistency, unbiasedness, the Cramer-Rao inequality, the Rao-Blackwell theorem, tests of hypotheses including uniformly most powerful tests and likelihood ratio tests.

Learning Outcomes



This course is intended to provide an in-depth knowledge of various aspects of statistical inference. Optimal procedures will be developed to solve a variety of problems arising in data analysis.

Classes will begin on January 9th and end on April 10th. Reading Week: February 18th- 26th

4. Course Materials

The recommended textbook is

*Introduction to Mathematical Statistics**, 8th or previous editions

by R.V. Hogg, J. W. McKean and A.T. Craig. Pearson/Prentice Hall (2019).

*A copy of a previous edition of this book can be borrowed at the Taylor Library's desk.

*This book can be purchased from the Book Store. An electronic copy is also available.



Additional course material will be posted to OWL: <http://owl.uwo.ca>.

Students are responsible for checking OWL (<http://owl.uwo.ca>) for announcements and updates on a regular basis. This is the primary method by which information will be disseminated to all students in the class.

If students need assistance, they can seek support on the [OWL Help page](#). Alternatively, they can contact the [Western Technology Services Helpdesk](#). They can be reached by phone at 519-661-3800 or ext. 83800.

5. Methods of Evaluation

The overall course grade will be calculated as follows:

**Two tests scheduled to take place in class on February 13th and March 24th, each one worth 30%.*

**Three assignments worth 8% each. Hard copies of your assignments will be due on January 23rd, February 6th and March 13th, by the end of the class.*

**A final project to be handed in on April 14th, worth 16%.*

The tests will be 'closed book' although some material may be allowed as will be specified beforehand on OWL. A nonprogrammable calculator will be required.

The department adopted a policy whereby there will be no make-up exams for missed tests. *If a student legitimately misses a midterm test and provides the required supporting documentation, the evaluation components will be reweighted as follows: the other test: 50%; each assignment: 10%; the final project: 20%*

Click

(https://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=5&SelectedCalendar=Live&ArchiveID=#SubHeading_73) for a detailed and comprehensive set of policies and regulations concerning examinations and grading.

6. Student Absences

Academic Consideration for Student Absences

Students who experience an extenuating circumstance (illness, injury or other extenuating circumstance) sufficiently significant to temporarily render them unable to meet academic requirements may submit a request for academic consideration through the following routes:

- (i) For medical absences, submitting a Student Medical Certificate (SMC) signed by a licensed medical or mental health practitioner to the Academic Counselling office of their Faculty of Registration.
- (ii) Submitting appropriate documentation for non-medical absences to the Academic Counselling office in their Faculty of Registration.

Note that in all cases, students are required to contact their instructors within 24 hours of the end of the period covered.

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons. **All documentation required for absences must be submitted to the Academic Counselling office of a student's Home Faculty.**

For the policy on Academic Consideration for Student Absences – Undergraduate Students in First Entry Programs, see:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_illness.pdf

and for the Student Medical Certificate (SMC), see:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf.

Religious Accommodation

When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at

<https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>.

7. Accommodation and Accessibility

Accommodation Policies

Students with disabilities work with Accessible Education (formerly SSD), which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at: [https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic Accommodation_disabilities.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic%20Accommodation_disabilities.pdf)

8. Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy,

https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf,

the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner.

Only nonprogrammable calculator will be allowed during the tests and final exam.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

9. Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on adding/dropping courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: <https://www.uwo.ca/sci/counselling/>.

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Accessible Education at (519) 661-2147 if you have any questions regarding accommodations.

Students who are in emotional/mental distress should refer to Mental Health@Western (<http://www.health.uwo.ca/mentalhealth>) for a complete list of options about how to obtain help.

Additional student-run support services are offered by the USC, <http://westernusc.ca/services>.