

Probability and Statistics I

Course Outline

1. Course Information

**Statistical Sciences 2857A
Interession 2025**



Lecture Hours: Tuesday, Thursday and Friday, 9 – 11 AM,
starting on May 13 and ending on June 20.

Please note that due to my participation in conferences and administrative responsibilities, some lectures may be asynchronous, in which case you will be notified ahead of time receive an e-mail message as soon as the recorded lecture becomes available.

Tutorials: Every Wednesday at 9 AM starting on May 14 and ending on June 18.

Prerequisites

0.5 course from Calculus 1000A/B, Calculus 1500A/B, or Applied Mathematics 1412A/B, each with a minimum mark of 60%, plus 0.5 course from Calculus 1301A/B (minimum mark 85%), Calculus 1501A/B (minimum mark 60%), or Applied Mathematics 1414A/B (minimum mark 60%). The former Applied Mathematics 1413 with a minimum mark of 60% may also be used to meet this 1.0 course prerequisite.

Mandatory statement: Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course, and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites

2. Instructor Information

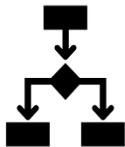
Instructor: Serge B. Provost, *Ph.D. (McGill)*



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Phone: 519-661-3624

Teaching Assistants: Lina Zeng lzeng72@uwo.ca
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3. Course Syllabus, Schedule, Delivery Mode



Course Description

Probability axioms, conditional probability, Bayes' theorem. Random variables motivated by real data and examples. Univariate discrete and continuous parametric distributions and their moment-generating functions. Bivariate distributions, expectation and variance. As well, the likelihood function will be defined and exploited as a means of estimating parameters in certain simple situations.

Course Objectives



You will learn the mathematics of probability with a focus on real-world examples. This course will also enable you to understand the foundations of statistical methods and their applications as well as prepare yourself for the succeeding course, SS2858.

4. Course Materials

The following sections of the textbook *A Brief Course in Mathematical Statistics* by E. Tanis and R. Hogg (Pearson/Prentice Hall) will be covered (at least in part):

1.1, 1.2, 1.3, 1.4, 1.5,
2.1, 2.2, 2.3, 2.4, 2.5, 2.6,
3.1, 3.2, 3.3, 3.4, 3.5, 3.6,
& 6.1, 6.2.



Additional sections or topics may be added time permitting.

*A copy of this book is available at the Taylor Library's desk.

As needed, supplementary hand-written or typed materials will be posted on OWL Brightspace: <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. Ensure that your settings enable you to receive messages from OWL Brightspace.

Should you require assistance, you can seek support on the [OWL Help page](#). Alternatively, you may 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 1 ½ hour online tests, each worth 25%, the first one to take place on Friday May 23 at 9 AM and the second one, on Friday June 6 at 9 AM. The 3-hour online final exam worth 50% of the total course grade will be held on June 23 or June 24 at the discretion of the Registrar's Office.

Final examinations are prescheduled at 9am, 2pm and 7pm. You should be prepared to write an exam at any of these times on June 23 or 24. You must write your final exam on the day and at the hour specified.

Note that some of the tests and final exam questions will be similar to examples and problems solved during the lectures or to exercises solved during the tutorials. The materials covered by each test and the final exam will be specified via an announcement at least four days prior. Only nonprogrammable calculators will be allowed during examinations.

Students should be prepared to use a remote proctoring software tool for the tests and final exam. This includes being familiar with the Proctortract onboarding process and having access to a computer with the minimum specification outlined on Western's Remote Proctoring website. No student will be allowed to write an examination without either a Western ONECard student ID or another piece of government-issued photo identification.

In the event that one misses a test and provides the required supporting documentation or makes use of an allowed absence, the other test will be worth 35% and the final exam, 65%. If you miss the final exam, you will be given the opportunity to write the Fall term final exam.

Note that the last day to drop the course without penalty is May 30.

General information about missed coursework:

Students should familiarize themselves with the University Policy on Academic Consideration – Undergraduate Students in First Entry Programs posted on the Academic Calendar: https://www.uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration_Sep24.pdf

This policy does not apply to requests for Academic Consideration submitted for attempted or completed work, whether online or in person. The policy also does not apply to students experiencing longer-term impacts on their academic responsibilities. These students should consult Accessible Education. For procedures on how to submit Academic Consideration requests, please see the information posted on the Office of the Registrar's webpage: https://registrar.uwo.ca/academics/academic_considerations/.

Academic Policies

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to your Dean's office as soon as possible, and contact your instructor immediately. If accommodation is approved by your Dean's office, your instructor will be notified, then it is your responsibility to make alternative arrangements with your instructor. In the event of a missed final exam, a "Recommendation of Special Examination" form must be obtained from the Dean's Office immediately. For further information please see: http://www.stats.uwo.ca/accommodation_medical.pdf. A student requiring academic accommodation due to illness, should use the Student Medical Certificate when visiting an off-campus medical facility. Or, request a Record's Release Form (located in the Dean's Office) for visits to Student Health Services. Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at this website: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

Please note that unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites. In accordance with policy, <http://www.uwo.ca/its/identity/activatenonstudent.html> 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 email received from the University at his/her official university address is attended to in a timely manner. The website for Registrarial Services is <http://www.registrar.uwo.ca>.

The Department has adopted a "Mutual Expectations" policy governing the classroom environment and all work submitted by students. The full text of the policy can be found at <https://www.uwo.ca/stats/undergraduate/mutual-expectations.html>. In summary, the policy was developed under the premise that all interactions between students and faculty should be governed by the principles of courtesy, respect and honesty.

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 previously specified.*

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

Please consult the University's medical illness policy at

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

The Student Medical Certificate is available at

https://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>.

Absences from Final Examinations

If you miss the Final Exam, please contact the Academic Counselling office of your Faculty of Registration as soon as you are able to do so. They will assess your eligibility to write the Special Examination (the name given by the University to a makeup Final Exam). You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (e.g., more than 2 exams in 23-hour period, more than 3 exams in a 47-hour period).

If a student fails to write a scheduled Special Examination, the date of the next Special Examination (if granted) normally will be the scheduled date for the final exam the next time this course is offered. The maximum course load for that term will be reduced by the credit of the course(s) for which the final examination has been deferred. See the Academic Calendar for details ([Special Examinations](#)).

7. Accommodation and Accessibility

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>.

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

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.

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>.