

SS3858B Mathematical Statistics Course Outline

1. Course Information

Course Information

Academic Term: Winter 2026

Lecture Hours: MWF 11:30 AM – 12:30 PM

Tutorial Hours: W 5:30 – 6:30 PM

Lecture/Tutorial Location: WSC 240

List of Prerequisites

A minimum mark of 60% in Statistical Sciences 3657A/B.

Unless you have either the prerequisites for this course or written special permission from the Department of Statistical and Actuarial Sciences to enroll in it, you may be removed and withdrawn from this course in accordance with university policy. This may be done after the add/drop deadline of the academic term, and the course will be marked as withdrawn (WDN) on your academic record. This decision may not be appealed.

2. Instructor Information

Instructors	Email	Office	Phone	Office Hours
Dr. Hyukjun (Jay) Gweon	hgweon@uwo.ca	WSC 211	519-661-2111 ext.87792	Wed 1:30 – 2:30 pm
TA				

Students must use their Western (@uwo.ca) email addresses when contacting their instructors.

3. Course Syllabus, Schedule, Delivery Mode

Point estimation: sufficiency, completeness, consistency, unbiasedness, Cramer-Rao inequality, Rao-Blackwell theorem, Hypotheses tests: uniformly most powerful tests, likelihood ratio tests

Below is the tentative weekly schedule.

Week		Topics
1	Jan 5-9	Review (Ch 5, 6)
2	Jan 12-16	Parameter estimation (Ch 8.1 – 8.4)
3	Jan 19-23	Parameter estimation (Ch 8.5)
4	Jan 26-30	Parameter estimation (Ch 8.6 – 8.8)
5	Feb 2-6	Testing hypothesis (Ch 9.1 – 9.2) Midterm 1
6	Feb 9-13	Testing hypothesis (Ch 9.3 – 9.4)
7	Feb 16-20	Reading week
8	Feb 23-27	Testing hypothesis (Ch 9.4 – 9.6)
9	Mar 2-6	Testing hypothesis (Ch 9.8 – 9.9) Midterm 2
10	Mar 9-13	Summarizing data (Ch 10.1 – 10.2)
11	Mar 16-20	Comparing two samples (Ch 11.1 – 11.2)
12	Mar 23-27	Comparing two samples (Ch 11.3 – 11.4) Midterm 3
13	Mar 30-Apr 3	Categorical data (Ch 13.1 – 13.4)
14	April 6 – 8	Categorical data (Ch 13.5 – 13.6)

Key Sessional Dates

Classes begin: January 5, 2026

Spring reading week: February 14 – 22, 2026

Good Friday (no class): April 3, 2026

Classes end: April 9, 2026

Final exam period: April 12 – 30, 2026

4. Course Materials

The instructor will use his own course notes and examples.

Course notes will be heavily based on the following book:

John A. Rice (2007) Mathematical Statistics and Data Analysis, 3rd Edition, Duxbury.

The textbook is free and available [here](#).

Students are responsible for checking the course OWL site (<https://westernu.brightspace.com/>) regularly for news and updates. This is the primary method by which information will be disseminated to all students in the class.

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

5. Methods of Evaluation

Grading Scheme and Assessment Dates

The overall course grade will be calculated as listed below:

Assignments (2)	10%
Midterm Tests (3)	51%
Final Exam	39%

Assignments

There will be **two homework assignments (each is worth 5%)** during the course.

Midterm Tests

There will be **three in-class midterm tests** that cover the course material. **The tentative test dates are Feb 6, Mar 6 and Mar 27. Each test will be worth 17% of your final grade.** The topics covered for each test will be announced later.

Final Exam

The date of the final exam (3-hour long) will be set by the university.

Specific conditions that are required to pass the course:

- Before the final exam, students are required to have completed assessments whose weight totals at least **39% of their final grade**. Students who do not meet this requirement may be given an opportunity to complete the requirement with the next offering of the course.

Notes:

- All tests are closed book.
- Late assessments with approved accommodation or academic consideration must be completed no later than 48 hours from the scheduled deadlines. Late assessments without approved accommodation or academic consideration will not be accepted.
- The weight for a missed assignment is not transferrable.

Use of Generative AI Tools

The use of generative AI tools (e.g., ChatGPT, Copilot, Gemini) is allowed for brainstorming ideas for assignments but not for producing your final written answers. Midterm tests and final exam are closed-book.

General information about missed coursework

Students must familiarize themselves with the *University Policy on Academic Consideration – Undergraduate Students in First Entry Programs*, posted on the Academic Calendar:

https://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/

All requests for Academic Consideration must be made within 48 hours after the assessment date or submission deadline.

All Academic Consideration requests must include supporting documentation; however, recognizing that formal documentation may not be available in some extenuating circumstances, the policy allows students to make one Academic Consideration request **without supporting documentation** in this course. However, the following assessments are excluded from this and, therefore, always require formal supporting documentation:

- **Examinations scheduled during official examination periods (Defined by policy)**

When a student *mistakenly* submits their one allowed Academic Consideration request **without supporting documentation** for the assessments listed above or those in the **Coursework with Assessment Flexibility** section below, the request cannot be recalled and reapplied. This privilege is forfeited.

Evaluation Scheme for Missed Assessments

Missed test: There are no make-up exams for missed tests. For those who miss a test with approved accommodation or academic consideration, the weight of the missed test will be transferred to the final exam.

When a student misses the Final Exam and their Academic Consideration has been granted, they will be allowed to write the Special Examination (the name given by the University to a makeup Final Exam). See the Academic Calendar for details (under [Special Examinations](#)), especially for those who miss multiple final exams within one examination period.

Essential Learning Requirements

Even when Academic Considerations are granted for missed coursework, the following are deemed essential to earn a passing grade.

Specific conditions that are required to pass the course:

- Before the final exam, students are required to have completed assessments whose weight totals at least **39% of their final grade**. Students who do not meet this requirement may be given an opportunity to complete the requirement with the next offering of the course.

6. Additional Statements

6.1 Religious Accommodation

When a recognized religious holiday or observance conflicts with an examination, test, or other scheduled academic obligation, students must request accommodation via the University's Student Absence Portal (SAP). This request should identify the conflict and specify which course component(s) (e.g. test, midterm, exam) are affected.

Students are encouraged to submit the SAP request as early as possible, but no later than two weeks before any examination, or one week before any mid-term test or quiz, to allow sufficient time for adjustment.

The SAP request serves as official notification to both the course instructor and the Academic Advising Office, in accordance with University policy:

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

The Faculty of Science considers religious accommodations as scheduling conflicts. Instructors should provide either a make-up exam or an earlier sitting of the same exam to accommodate the student.

For more information on recognized religious holidays, please visit the Diversity Calendar posted on the Equity, Diversity & Inclusion website - <https://www.edi.uwo.ca>

6.2 Academic Accommodation Policies

Students with disabilities are encouraged to contact Accessible Education, 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.

6.3 General Academic Policies

The website for Registrar Services is <https://www.registrar.uwo.ca/>.

Use of @uwo.ca email: 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 email address. It is the responsibility of the account holder to ensure that emails received from the University at their official university address are attended to in a timely manner.

Requests for Relief (formally known as “appeals”)

Policy on Request for Relief from Academic Decision:

https://uwo.ca/univsec/pdf/academic_policies/appeals/requests_for_relief_from_academic_decisions.pdf

Procedures on Request for Relief from Academic Decision (Undergraduate):

https://uwo.ca/univsec/pdf/academic_policies/appeals/undergrad_requests_for_relief_procedure.pdf

Procedures on Request for Relief from Academic Decision (Graduate):

https://uwo.ca/univsec/pdf/academic_policies/appeals/graduate_requests_for_relief_procedure.pdf

6.4 Scholastic Offences

Policy on Scholastic Offences:

https://uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_offences.pdf

Procedures on Scholastic Offences (Undergraduate):

https://uwo.ca/univsec/pdf/academic_policies/appeals/undergrad_scholastic_offence_procedure.pdf

Procedures on Scholastic Offences (Graduate):

https://uwo.ca/univsec/pdf/academic_policies/appeals/graduate_scholastic_offence_procedure.pdf

Use of Electronic Devices During Assessments

In courses offered by the Faculty of Science, the possession of unauthorized electronic devices during any in-person assessment (such as tests, midterms, and final examinations) is strictly prohibited. This includes, but is not limited to: mobile phones, smart watches, smart glasses, and wireless earbuds or headphones.

Unless explicitly stated otherwise in advance by the instructor, the presence of any such device at your desk, on your person, or within reach during an assessment will be treated as a *scholastic offence*, even if the device is not in use.

Only devices expressly permitted by the instructor (e.g., non-programmable calculators) may be brought into the assessment room. It is your responsibility to review and comply with these expectations.

Use of Generative AI Tools

Unless otherwise stated, the use of generative AI tools (e.g., ChatGPT, Microsoft Copilot, Google Gemini, or similar platforms) is **not permitted** in the completion of any course assessments, including but not limited to: assignments, lab reports, presentations, tests, and final examinations.

Using such tools for content generation, code writing, problem solving, translation, or summarization—when not explicitly allowed—will be treated as a **scholastic offence**.

If the use of generative AI is permitted for a particular assessment, the conditions of use will be specified by the instructor in advance. If no such permission is granted, students must assume that use is prohibited. It is your responsibility to seek clarification before using any AI tools in academic work.

6.5 Support Services

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

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

Western is committed to reducing incidents of gender-based and sexual violence (GBSV) and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced GBSV (either recently or in the past), you will find information about support services for survivors, including emergency contacts, at:

https://www.uwo.ca/health/student_support/survivor_support/get-help.html.

To connect with a case manager or set up an appointment, please contact support@uwo.ca.

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. If you have any questions regarding accommodations, you may also wish to contact Accessible Education at

http://academicsupport.uwo.ca/accessible_education/index.html

Learning-skills counsellors at Learning Development and Success (<https://learning.uwo.ca>) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

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