

Introduction to Study Design (SS3843A) Course Outline

1. Course Information

Course Information

Course Name: Introduction to Study Design (SS3843A)

Academic Term: Fall 2025

Lecture Hours: Monday, Wednesday, Friday 8:30 – 9:30 AM

Lecture Location: WSC 240

List of Prerequisites

List of Prerequisites Prerequisite(s): A minimum mark of 60% in Statistical Sciences 2858A/B or a minimum mark of 70% in one of Statistical Sciences 2035, Statistical Sciences 2141A/B, Statistical Sciences 2143A/B, Statistical Sciences 2244A/B, Biology 2244A/B, Economics 2222A/B, MOS 2242A/B, Psychology 2812A/B or the former Psychology 2810; and enrollment in a module offered by the departments of Applied Mathematics; Mathematics; and Statistical and Actuarial Sciences.

Unless you have either the prerequisites for this course or written special permission from your Department of Statistical and Actuarial Sciences to enroll in it, you may be removed and withdrawn from this course under university policy. This may be done after the add/drop deadline of the academic term, and the course will be marked as withdrawn (WDN) on your academic record.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. Ropo Ebenezer Ogunsakin (Instructor)	rogunsak@uwo.ca	WSC 214A	416-788-6042	Fri 1-2 PM
TA: David Snoddon	dsnoddon@uwo.ca			
TA.: Samina Islam	sislam97@uwo.ca			

Notes: Email is the best way to contact me. Students must use their Western (@uwo.ca) email addresses when contacting me. If emailing to request an appointment outside of office hours, please suggest at least two different times, listed in your order of preference.

3. Course Syllabus, Schedule, Delivery Mode

The course consists of two major sections: survey sampling and experimental design. Topics of survey sampling include simple random sampling from finite populations, stratified sampling, regression estimators, and cluster sampling. Topics of experimental design include basic principles of experimental design, completely randomized design-one way ANOVA, randomized block design, Latin square design, and Factorial experiments.

Lecture hours: Monday, Wednesday, Friday, 8:30 – 9:30 AM.

All lectures will be delivered in person.

This course will cover the following topics in each of the various weeks:

- Overview of Survey Sampling Techniques
- Simple Random Sampling
- Stratified and Cluster Sampling Methods
- Ratio and Regression Estimation Techniques
- Overview of Hypothesis Testing
- Principles of Experimental Design
- Working with Single Factors or One-Way ANOVA in Completely Randomized Experimental Designs
- Randomized Block Designs
- Comprehending Factorial Designs
- Working with 2^k Factorial Design
- Latin Square Design
- Summary and Revision

Key Sessional Dates

Classes begin: September 4

Thanksgiving: October 13

Fall Reading Week: November 3 – 9

Classes end: December 9

Exam period: December 11 – 22

4. Course Materials

The instructor will use his course notes and examples.

Course notes are heavily based on the following four books (not required but highly recommended):

1. Elementary Survey Sampling (7th edition) by Richard L. Scheaffer, William Mendenhall, R. Lyman Ott, Kenneth G. Gerow. Cost of the textbook: \$158.25
2. Sampling Design and Analysis by Sharon L. Lohr (Third Edition). Weblink of the textbook cost: [Sampling: Design and Analysis: Lohr, Sharon L.: 9780367279509: Books - Amazon.ca](https://www.amazon.ca/Sampling-Design-and-Analysis-Lohr-Sharon-L-9780367279509/dp/0367279509)
3. Design and Analysis of Experiments by Douglas C. Montgomery (8th Edition). Cost of the textbook: \$449.45

4. Introduction to Design and Analysis of Experiments by George W. Cobb. Cost of the textbook: \$287.09

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

Software: We will use RStudio statistical software. A laptop or personal computer with R/RStudio installed is recommended. All examples for the course will be demonstrated using RStudio. See the [Comprehensive R Archive Network](#) and [RStudio Desktop - Posit](#) for more information on how to install R/RStudio. All R codes for class examples will be posted to OWL: <https://westernu.brightspace.com/>. If students need assistance with the course OWL site, they can seek support on the [OWL Brightspace Help](#). 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

The overall course grade will be calculated as listed below:

Homework (2)	10%
Lab Assignments (2)	10%
Term Tests (2)	30%
Final Exam	50%

Assessment Plan

Homework Assignments (10%): You will have 2 homework assignments. Questions may come from a variety of sources. When answering questions, be as clear and precise as possible. Show all your work to receive full credit for a solution. All questions should be numbered and submitted in the order they are asked. The topics covered for each homework will be announced later. Each homework assignment will be worth 5%.

Due Dates: October 10 and November 28.

Lab Assignments (10%): For each lab assignment, you will be given a dataset, and you will be required to use RStudio to generate appropriate statistical output. You will then use that output to answer the questions given in the lab assignment. Before you start working on the lab assignment problems, you should first familiarize yourself with the relevant lecture material. It is your responsibility to keep a backup of your work. The topics covered for each lab assignment will be announced later. Each lab assignment will be worth 5%.

Due Dates: October 6 and November 14

Term Tests (30%): There will be two term tests. Each test will be 50 minutes long and held in class. The format of these will be part short answer and part long answer. More details will be available closer to the term test. The dates of the tests are **Oct 22nd (Term Test 1)** and **Nov 17th (Term Test 2)**. Each term test will be worth 15%. The topics covered for each test will be announced later.

Final Exam (50%): The cumulative final exam will be 3 hours long. It will be held during the official examination period. Its date and time will be scheduled by the Registrar's Office.

Important information:

- All tests are closed book.
- The weight for a missed assignment is not transferable.

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://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/

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

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

- Homework assignments submitted after the deadline will incur a 5% deduction, with an additional 10% deduction applied for each subsequent 24 hours. Homework assignments that are more than one week late will not be accepted for partial marks unless you have contacted the instructor to request an extension. The weight for a missed homework assignment is NOT transferable.
- Late lab assignments: Late lab assessments will be subject to a late penalty of 20%/day, and lab assignments that are submitted 5 or more days late will not be graded. The weight for a missed lab assignment is NOT transferable. The weight for a missed lab assignment is NOT transferable.
- There are no make-up tests for missed term tests. For those who do legitimately miss a test AND their Academic Consideration has been granted, the weight of the missed test will be transferred to the final exam. If the Academic Consideration is not given, then you will receive a mark of zero for the missed test.

Use of Generative AI Tools

Students are permitted to use generative AI tools for learning support; however, they cannot use AI to write, edit, or pre-evaluate a class assignment, test, or exam for which they will be graded based on their academic performance. 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.

Rounding of Marks Statement

All students will be treated equally and evaluated solely on their actual achievement. Final grades for this course, regardless of the number of decimal places used in marking individual assignments and tests, will be rounded to one decimal place and then to the nearest whole number. For example, 74.4 becomes 74, and 74.5 becomes 75. Marks WILL NOT be rounded up to the next grade or GPA, e.g., a 79 will NOT be rounded up to 80, an 84 WILL NOT be rounded up to 85, etc. The mark you receive is the mark you achieved, and the assigned mark; requests for "bumping" the grade will be denied.

6. Additional Statements

Religious Accommodation

When conflicts arise with a religious holiday that requires an absence from the University or prohibits certain activities, students should request an accommodation for their absence in writing to the course instructor and/or the Academic Advising office of their Faculty of Registration. This notice should be made as early as possible, but not later than two weeks prior to the writing of the examination (or one week prior to the writing of the test).

Please visit the Diversity Calendars posted on our university's EDID website for the recognized religious holidays - <https://www.edi.uwo.ca>

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.

Academic Policies

The website for Registrar Services is <https://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 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.

Note: Only non-programmable calculators are permitted on tests and exams. You must bring your own NON-PROGRAMMABLE calculator (you cannot use a programmable calculator, even if you clear the memory).

Requests for Relief (formally known as “appeals”)

Policy on Request for Relief from Academic Decision:

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

Scholastic Offences

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 website:

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

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.

Tests and examinations in this course will be conducted using a remote proctoring service. By taking this course, you are consenting to the use of this software and acknowledge that you will be required to provide personal information (including some biometric data) and the session will be recorded. Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service. More information about this remote proctoring service, including technical requirements, is available on Western’s Remote Proctoring website at:

<https://remoteproctoring.uwo.ca>

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.

[suggested] 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. You may also wish to contact Accessible Education at

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

if you have any questions regarding accommodations.

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/>.