SS3843A Introduction to Study Design
Fall 2021

Technical Requirements

- Stable internet connection
- Laptop or computer
- Working microphone (when necessary)
- Working webcam (when necessary)

Important Dates

<table>
<thead>
<tr>
<th>Classes Start</th>
<th>Reading Week</th>
<th>Classes End</th>
<th>Study Day</th>
<th>Exam Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 8</td>
<td>November 1-7</td>
<td>December 8</td>
<td>December 9</td>
<td>December 10-21</td>
</tr>
</tbody>
</table>

*November 12, 2021: Last day to drop a first-term half course or a first-term full course without penalty.

Course Information

Statistics 3843A Description
A case study approach to how data are collected in science, social science and medicine, including the methods of designed experiments, sample surveys, observational studies and administrative records.

List of 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 2810; and enrollment in a module offered by the departments of Applied Mathematics; Mathematics; and Statistical and Actuarial Sciences.

Other Notes
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.

Contingency Plan for an In-Person Class Pivoting to 100% Online Learning
In the event of a COVID-19 resurgence during the course that necessitates the course delivery (currently in-person) moving away from face-to-face interaction, all remaining course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will not change. Any remaining assessments will also be conducted online as determined by the course instructor.
Instructor Information

**Course Instructor**
Chelsea Uggenti

**Contact Information**
Office: WSC ??
Email: cuggenti@uwo.ca
Office Hours: In-person, as announced in class/on OWL and by appointment

Note:
- Please use your Western (@uwo.ca) email address.
- Emails will typically be responded to within one-three business days.

**Have a Question/Concern?** Find the best method of asking here:

- **Face to Face**
  - Help on assignments or homework
  - Ideas for improvement
  - Strategies for studying/success

- **OWL Forums**
  - Course material
  - Course policies*
  - Deadlines*
  - Using R

- **UWO Email**
  - Grades or personal situations related to 553843
  - Academic relief and/or accommodations

*Policies and deadlines are described in this syllabus

Course Schedule and Delivery Mode

**Delivery of course material**

<table>
<thead>
<tr>
<th>Component</th>
<th>Mode</th>
<th>Days/Times</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>In-person</td>
<td>Mon/Wed/Fri: 8:30–9:30am</td>
<td>weekly</td>
</tr>
</tbody>
</table>

Expectations

To help maintain a **safe, respectful, and productive community** in which we – students and teaching team alike – can take risks in our learning/teaching, tackle challenging concepts, and ultimately grow as learners, we should endeavor to follow these mutual expectations:

- Be prepared for class.
- Be active & participate in class.
- Be open to trying new ways to support learning.
- Promote an inclusive and safe learning environment.
- Learn from mistakes and seek/review/provide feedback.
- Actively listen to and respect others in all class-related environments.
- Ask & respond to questions/concerns in a timely manner (acknowledging busy times!)
## Learning Outcomes

This course is meant to be both introductory and comprehensive; conceptual and practical. The main concepts are survey sampling and designed experiments. Other important topics covered include selection bias, measurement error, research ethics, observational studies, and administrative records.

By the end of this course, a successful student should be able to:

| Design sampling and study procedures to collect relevant data addressing a research question. | • Distinguish between various survey sampling techniques.  
• Identify issues associated with survey sampling (e.g., bias, error)  
• Recognize the importance of collaboration with other professionals during the design phase of a survey. |
| --- | --- |
| Understand the use of ethical practices in the experimental or study design process. | • Identify the key concepts of research ethics.  
• Develop an all-encompassing definition of research ethics together with your peers.  
• Explain the importance of research ethics in real-world surveys/experiments. |
| Analyze data using appropriate methods based on the design of the experiment. | • Describe the complete model for a designed experiment with constraints and assumptions.  
• Select appropriate designed experiment procedures for a research question.  
• Interpret the results for a given procedure (e.g., test for differences between variables). |
| Use statistical software to explore, summarize, analyse, interpret, and communicate data. | • Use R to create and modify graphical and numerical summaries of data.  
• Use R to conduct different designed experiment procedures, like a single analysis of variance, including evaluating conditions for model fit.  
• Interpret R (including accompanying code) or other statistical software output correctly. |
| Communicate statistical concepts, analyses, and arguments in an accurate and scholarly manner. | • Apply vocabulary to describe statistical concepts, procedures, and ideas.  
• Apply conventional formats for reporting and interpreting results of statistical analyses in written/graphical form.  
• Justify the choice of statistical procedures (e.g. selected study designs). |
Course timetable
This schedule is tentative; we may get a little ahead/behind on topics. The timing of assignment/report deadlines may be adjusted to match our progression. All quizzes/maps/participation, reports/assignments, midterms, and final project activities/deadlines are highlighted.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic(s)</th>
<th>Graded Components and Deadlines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept 8-10</td>
<td>- Introductions, Syllabus, Review</td>
<td></td>
</tr>
<tr>
<td>Sept 13-17</td>
<td>- Survey Sampling Introduction</td>
<td>Monday, Wednesday</td>
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<tr>
<td></td>
<td>- Simple Probability Sampling</td>
<td></td>
</tr>
<tr>
<td>Sept 20-24</td>
<td>- Stratified Sampling</td>
<td>Monday, Wednesday</td>
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<tr>
<td></td>
<td>- Ratio &amp; Regression Estimation</td>
<td>Wednesday Brainstorm due</td>
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<tr>
<td>Sept 27 – Oct 1</td>
<td>- Cluster Sampling</td>
<td>Monday, Wednesday</td>
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<tr>
<td></td>
<td>- Nonresponse</td>
<td>Report 1 due, Wednesday Brainstorm due</td>
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<tr>
<td>Oct 4-8</td>
<td>- Midterm 1 Review (Oct 6)</td>
<td>Monday, Wednesday</td>
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<tr>
<td></td>
<td></td>
<td>Online Class (Group Activity), Concept Map 1 due</td>
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<tr>
<td>Oct 11-15</td>
<td>- Research Ethics</td>
<td>Monday, Wednesday</td>
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<tr>
<td></td>
<td></td>
<td>Online Class (Group Activity), Survey Groups due</td>
</tr>
<tr>
<td>Oct 18-22</td>
<td>- Experimental Design Introduction</td>
<td>Monday, Wednesday</td>
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<tr>
<td></td>
<td>- Experiments with Single Factor</td>
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<tr>
<td>Oct 25-29</td>
<td>- Continue Experiments with Single Factor</td>
<td>Monday, Wednesday</td>
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<td></td>
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<tr>
<td>Nov 1-5</td>
<td>Reading Week (no classes)</td>
<td>Monday, Wednesday</td>
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<tr>
<td>Nov 8-12</td>
<td>- Randomized Blocks, Latin Squares, and Related Designs</td>
<td>Report 2 due, Wednesday</td>
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<td></td>
<td>- Factorial Designs</td>
<td>Wednesday Midterm 2 (in-class)</td>
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<tr>
<td>Nov 22-26</td>
<td>- Continue Factorial Designs</td>
<td>Monday, Wednesday</td>
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<tr>
<td></td>
<td>- $2^k$ Factorial Designs</td>
<td>Wednesday Quiz 4</td>
</tr>
<tr>
<td>Nov 29 – Dec 3</td>
<td>- Continue $2^k$ Factorial Designs</td>
<td>Monday, Wednesday</td>
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<tr>
<td></td>
<td>- Nested Designs</td>
<td>Concept Map 2 due</td>
</tr>
<tr>
<td>Dec 6-8</td>
<td>- Wrap Up</td>
<td>Monday, Wednesday</td>
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<tr>
<td></td>
<td>- Final Project Group Work (time permitting)</td>
<td>Wednesday Participation Activities due</td>
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<tr>
<td></td>
<td></td>
<td>WS Centre Consult due</td>
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<tr>
<td>Dec 10-21</td>
<td>Final Exam Period</td>
<td></td>
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<tr>
<td></td>
<td>Final Project due (Dec 13); Group Assessment due (Dec 15)</td>
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Course Materials

Required materials
These materials are “required” in that each student needs access to them to be successful in the course. Whether that access is individual, shared digitally by a group of individuals, or borrowed from the commons is up to you. In addition to these three main resources, we will occasionally use articles, videos, and applets available freely online to supplement your learning. If you discover any (open access) resources that are helpful to you for this course, I encourage you to share the details with the rest of the class!

The OWL site (http://owl.uwo.ca, “STAT ???”) is used heavily; Students are responsible for checking the site on a regular basis. It provides:
- Lecture materials
- Assignment instructions and materials
- Access to activities, quizzes, and other graded components
- Practice questions
- Communication tools (Zoom, Forums)

This course requires using the statistical software program R and the integrated development environment, R Studio, to transform, visualize, analyse data, and communicate results. Both software packages are free to download to your personal computer (best experience) or used through a browser (if necessary). Instructions for downloading/accessing R and R Studio is on the OWL site.

There is no assigned textbook for the course. The core lecture notes will be available on the OWL course website. However, for supplementary reference, the first textbook is available on OWL (Course Readings*) and the following two textbooks are on reserve in the Taylor Library:
- *Sampling: Design and Analysis (2019) by Sharon L. Lohr
- Design and Analysis of Experiments, 9th Ed (2017) by Douglas C. Montgomery
- Design and Analysis of Experiments, 8th Ed (2013) by Douglas C. Montgomery

If you need assistance with OWL, please seek support on the OWL Help page. Alternatively, contact the Western Technology Services Helpdesk (by phone at 519-661-3800 or ext. 83800). Google Chrome or Mozilla Firefox are the preferred browsers to optimally use OWL and our course materials. Make sure your browser is up-to-date.

If you need assistance with R, your instructor can help during office hours or class time; there is also a WEALTH of online knowledge just a Google search away for R.

Universal Design
This course has been designed using the principles of Universal Design for Learning, which “focuses on eliminating barriers through initial designs that consider the needs of diverse people”\(^1\). Consequently, you will encounter choice for many parts of the course. For example, some course material will be available in video format as well as in text format—which format you choose to cover the material is up to you. Similarly, some assessments will offer a choice of topic or approach to build on your own personal interest. As well, diagnostic assessments (i.e., short quizzes with small weights) are spread throughout the term to help you determine what you already know about the course topics, so you can more efficiently allocate your time for learning the course material to achieve the learning outcomes. One major consequence of this design is that it will look like there is a lot to do for the course. Keep in mind, therefore, that some of the available content will be redundant and is available simply to support your preferred learning approach.

\(^1\) Novak, K. and T. Thibodeau. 2016. UDL in the Cloud: How to design and deliver online education using Universal Design for Learning. CAST, Inc., Wakefield, Massachusetts.
Methods of Evaluation

There are several formative and summative assessments\(^2\) used in this course to assist your learning. Please read the evaluation methods below carefully along with the descriptions of the assessments (WHY? WHAT? HOW?). If you have any questions about any of the assessments, please do not hesitate to ask during class, office hours, or by email.

Course Survey Questions

WHY? The Course Survey Questions will be used to create a survey about our course, including questions about course content, assessments, the syllabus, etc. The survey itself will be used as one of the Participation Activities.

WHAT? You will be asked to create Course Survey Questions (and if necessary, answers) related to our course. For example, if you are asking a multiple-choice question, you must also include the answer! But if you are asking a short answer question then no answer is needed. A maximum of 2 questions can be submitted. The submission of one question will count towards 0.5% of your grade – for up to a maximum of 1% of your total grade. Further details will be discussed in class.

HOW? The Course Survey Questions must be uploaded to the OWL “Assignment” tool in either PDF format (.pdf) or as a Word document (.doc or .docx). Please clearly indicate what type of question you are writing in the submission (e.g., multiple choice, true/false, short answer, long answer, etc.) and include your solutions.

Participation Activities

WHY? The Participation Activities are created to promote (i) active learning of important course concepts, (ii) engagement with the course material, (iii) self-reflection and metacognition, and/or (iv) summarization/practice of what you are learning.

WHAT? There are approximately eight (9) Participation Activities available from which students can choose a subset to complete (which Participation Activities and how many are chosen for completion depends on you). One completed activity will count towards 1% of your grade – for up to a maximum of 5% of your total grade.

HOW? The method of completion varies depending on the Participation Activity. There is one main submission method that will be used: uploading to OWL “Assignments” tool. Further details about these activities will be available on OWL and discussed in class. To receive a “completion” for a participation activity, students must complete an assigned task that demonstrates their engagement with the material (to the instructor’s discretion).

Quizzes

WHY? The Quizzes serve as small opportunities to demonstrate your understanding, application, and integration of the course material, in addition to holding you accountable for attending the lectures and working on the material on a regular basis.

WHAT? Four (4) Quizzes, each with multiple choice, true/false, numeric response, or fill in the blank questions. The Quizzes will be set with the expectation that a prepared student could complete the Quiz in approximately 10 minutes. Each quiz is worth 1% of your total grade and only your best 3 quiz grades will count towards for final mark (i.e., the lowest quiz grade will be dropped).

HOW? Unless otherwise described on the OWL course site, the Quizzes will be accessed, completed, and submitted through the OWL “Tests & Quizzes” tool. These Quizzes will be timed assessments to be completed during a restricted availability period. If any quizzes are missed due to an accommodation (either the self-
reported absence or academic counselling), the weight of the quizzes will be spread across the rest of the remaining quizzes.

**Concept Maps**

**WHY?** The *Concept Maps*, creating a visual representation of key ideas or thoughts in a graphic or pictorial form, are created to help you identify relationships between concepts while developing a cohesive knowledge structure.

**WHAT?** There are two (2) *Concept Maps*. Each map is worth 2% of your total grade and the tentative due dates are listed in the course timetable (see page 4 of this syllabus).

**HOW?** The *Concept Maps* must be uploaded to the OWL “Dropbox” tool, **AND** a PDF file must be uploaded to Gradescope.

**Reports**

**WHY?** The *Reports* are created to demonstrate your mastery on the learning outcomes (see page 3 in this syllabus) in an authentic manner and to practice your written communication skills.

**WHAT?** There are two (2) *Reports*. These typed reports will be short (1-2 pages) to develop clear and concise writing. Each report is worth 5% of your total grade and the tentative due dates are listed in the course timetable (see page 4 of this syllabus).

**HOW?** The *Reports* must be uploaded to the OWL “Dropbox” tool, **AND** a PDF file must be uploaded to Gradescope.

**Assignments**

**WHY?** The *Assignments* are created to demonstrate your mastery on the learning outcomes (see page 3 in this syllabus) in an authentic manner, including your use of the statistical software, R.

**WHAT?** There are three (3) *Assignments*, each composed of (typically) 1–5 short answer questions requiring written responses and/or solving theoretical proofs. They may also include graphs/tables and/or R code and output. Each assignment is worth 5% of your total grade and the tentative due dates are listed in the course timetable (see page 4 of this syllabus).

**HOW?** The *Assignments* must be uploaded to the OWL “Dropbox” tool, **AND** a PDF file must be uploaded to Gradescope.

**Writing Support (WS) Centre Consult**

**WHY?** The *Writing Support Centre Consult* is used to provide effective feedback and support for your written communication. Writing is a key course outcome (see page 3 of this syllabus) and every student at Western has access to writing support through the Centre (http://writing.uwo.ca/).

**WHAT?** The *Writing Support Centre Consult* can be used for one of your written assessments (i.e., one of the participation activities or reports; **cannot be used for group work**) and is worth 2% of your final grade.

**HOW?** You will submit a draft of your writing to the Writing Support Centre through its “Online Writing Assistance” portal. Once you have engaged in this writing consultation, you will then consider incorporating the feedback for your final draft of the writing assessment (i.e., participation activity or report). Completion of this component involves the following items:

1. Submit your draft of a participation activity or report using the Online Writing Assistance portal.
2. Submit a copy of that draft along with dated confirmation of the submission from the Writing Support Centre using the OWL “Dropbox” tool. **Please note which participation activity or report the draft is for on your document** (e.g., “Draft of Participation Activity 1” or “Draft of Report 2”).
3. Include the feedback that you received from the Writing Centre to submit your participation activity or report using the correct OWL and/or Gradescope tools.
Midterms
**WHY?** The *Midterms* serve as an opportunity to demonstrate your understanding, application, and integration of the course material, including practical application of the skills/concepts with the statistical software, R.

**WHAT?** There will be two (2) *Midterms*. The first one will take place on Friday, October 8th and the second one on Wednesday, November 17th. Each midterm is worth 17.5% of your total grade.

If one legitimately misses a test and provides the required supporting documentation, the other midterm test will be worth 25%, each assignment will be worth 7%, and the final project (individual take-home questions) will be worth 14%.

If one legitimately misses both tests and provides the required supporting documentation, a 50-minute comprehensive and cumulative make up test will be held on Friday, November 26th at 7pm, worth 35%.

**HOW?** The *Midterms* will be 50 minutes in length during lecture time.

Final Project
**WHY?** The *Final Project* serves as an opportunity to demonstrate your understanding, application, and integration of the course material, including practical application of the skills/concepts with the statistical software, R.

**WHAT?** The final project will consist of two components (one on survey sampling and one on designed experiments). The first component (survey sampling) will be done in groups and consist of a brainstorming session, survey proposal, report, and group assessment. The second component (designed experiments) will be done individually and consist of take-home questions. More details about the final project will be discussed during the term.

**HOW?** The *Final Project* submissions will involve the OWL “Forums”, “Assignments”, and “Dropbox” tools along with Gradescope. More details will be discussed in class as the term progresses.

Evaluation Scheme
The evaluation is set up to promote *mastery of the materials/skills* listed above by the end of the course, and to provide *opportunities to learn from mistakes*.

A final grade, out of 100, will be calculated as listed below.

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Survey Questions</td>
<td>1%</td>
</tr>
<tr>
<td>Participation Activities (x9)</td>
<td>5%</td>
</tr>
<tr>
<td>Quizzes (x4)</td>
<td>3% total (1% each; best 3 of 4)</td>
</tr>
<tr>
<td>Concept Maps (x2)</td>
<td>4% total (2% each)</td>
</tr>
<tr>
<td>Reports (x2)</td>
<td>10% total (5% each)</td>
</tr>
<tr>
<td>Assignments (x3)</td>
<td>15% total (5% each)</td>
</tr>
<tr>
<td>Writing Centre Support Consult</td>
<td>2%</td>
</tr>
<tr>
<td>Midterms (x2)</td>
<td>35%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Final Project</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brainstorm (individual)</td>
<td>1%</td>
</tr>
<tr>
<td>Survey Proposal (group work)</td>
<td>2%</td>
</tr>
<tr>
<td>Report (group work)</td>
<td>10%</td>
</tr>
<tr>
<td>Group Assessment (individual)</td>
<td>2%</td>
</tr>
<tr>
<td>Take-Home Questions (individual)</td>
<td>10%</td>
</tr>
</tbody>
</table>

25% total
Bonus Marks: Midterm Questions

WHY? Writing your own midterm questions provides you with an opportunity to review course material while linking concepts together.

WHAT? You will be asked to create multiple choice, true/false, and short answer questions on course materials for each midterm. You can receive up to 1% for submitting Midterm 1 questions and up to 1% for submitting Midterm 2 questions, for a total of 2% in bonus marks that will count towards your final grade. We are looking for quality over quantity – 1% will be awarded for a question that doesn’t require editing/changing and 0.5% will be awarded for questions that do require it (left to the instructor’s discretion). All questions submitted will require solutions. Further details will be discussed in class.

HOW? The Bonus Midterm Questions must be uploaded to the OWL “Assignments” tool in either PDF format (.pdf) or as a Word document (.doc or .docx). Please clearly indicate what type of question you are writing in the submission (e.g., multiple choice, true/false, short answer, long answer, etc.) and include your solutions.

Computing and/or Calculator Requirement
You will require a cordless, non-programmable, scientific calculator for the midterm tests. No other electronic devices may be in your possession during midterm tests except for this simple scientific calculator.

Homework
A list of homework problems will be posted on the course website and it may be updated throughout the term. Solutions to these problems are not to be handed in. However, for most students, working on these problems regularly and diligently is essential to success in the course. In addition to the posted list of homework problems, you are strongly encouraged to attempt additional problems for extra practice (see reserved textbooks!)

General Comments on Grading
The assessment item weightings have been set to:

- Recognize the workload of each item;
- Highlight the relative importance to the learning outcomes;
- Acknowledge that mastery takes time.

The evaluation scheme is also set up with the awareness that we are not “perfect” every day; therefore, I have several assessments that have smaller weights. As well, students have several opportunities to develop their skills (e.g., written communication) before the final project report.

Accommodated Evaluations
There are two methods to obtain accommodations (e.g., handling missed work or requiring deadline extensions) in this course: (i) Self-Reported Absences, and (ii) through Academic Counselling (i.e., submitting relevant documentation to an Academic Counsellor). How accommodations are handled is described below.

All assessments during the term (except for the make-up midterm test) are worth less than 30% of the course grade, and therefore are ‘eligible’ for accommodation via a Self-Reported Absence. The following situations apply when using a Self-Reported Absence and/or when Accommodation has been obtained from an Academic Counselor:

- Course Survey Questions, Concept Maps, Reports, or Assignments should be submitted within 24 hours of the submission of the end of the 48-h period covered by a Self-Reported Absence. After the 24 hours they will be subject to a late penalty of 20% per day or portion thereof, and assessments that are submitted 5 or more days late will not be graded.
- An Assignment or Report granted an extended deadline accommodation through Academic Counseling (i.e., beyond that described in the point above) can be submitted up until the time that the graded Assignment/Report has been returned to the class. If the Assignment/Report accommodation period extends even beyond that timeframe, then an INC will be issued.
• When a group member for the Final Project (group work) has been granted a deadline extension, the Final Project Survey Proposal and/or the Final Project Report should be submitted ‘as is’ (i.e., without the accommodated student’s contributions) by the original deadline. Then, the accommodated student’s contributions to the Project can be added later, and the ‘completed’ Project submitted to replace the initial submission.

• If any Quizzes are missed due to an accommodation, the weight of the quizzes will be spread across the rest of the remaining quizzes.

• If one legitimately misses a Midterm test and provides the required supporting documentation, the other midterm test will be worth 25%, each assignment will be worth 7%, and the final project (individual take-home questions) will be worth 14%.

• If one legitimately misses both Midterm tests and provides the required supporting documentation, a 50-minute comprehensive and cumulative make up test will be held on Friday, November 26th at 7pm, worth 35%. If the make-up Midterm test is missed, the student will receive an INC and complete the task the next time the course is offered.

Note that Participation Activities and the Writing Centre Support Consult are not accommodated; a student can simply complete a different Participation Activity that is still available (i.e., with a deadline that has not yet passed) and a student has the entire term to submit their Writing Centre Support Consult for one of their written assessments (i.e., any one of the participation activities or reports). It behooves students to complete their Participation Activities and Writing Centre Support Consult throughout the term, rather than waiting until the last weeks in the course to submit them.

The Final Project Take-Home Questions have an automatic 12-h ‘grace period’. That is, if you cannot make the original deadline set, you will have an additional 12-h period during which you can still submit the assessment without requiring any of the following: accommodation from Academic Counseling, the use of a Self-Reported Absence, or permission from the instructor. So, if you need that extra 12-hours to get this assessment submitted, simply take it—no questions asked. Beyond that 12-h grace period, a late assessment without accommodation will not be accepted. The Final Project Take-Home Questions should be submitted within 24 hours of the submission of the end of the 48-h period covered by a Self-Reported Absence.

Click here for a detailed and comprehensive set of policies and regulations concerning examinations and grading.

Late Submission Policy
Assessments (e.g., concept maps, reports, assignments, etc.) submitted after the date/time specified will be subject to a late penalty of 20% per day or portion thereof, and assessments that are submitted 5 or more days late will not be graded.

Rounding of Marks Statement
Across the Sciences Undergraduate Education programs, we strive to maintain high standards that reflect the effort that both students and faculty put into the teaching and learning experience during this course. All students will be treated equally and evaluated based only on their actual achievement. Final grades on this course, irrespective of the number of decimal places used in marking individual assignments and tests, will be calculated to one decimal place and rounded to the nearest integer, e.g., 74.4 becomes 74, and 74.5 becomes 75. Marks WILL NOT be bumped to the next grade or GPA, e.g., a 79 will NOT be bumped up to an 80, an 84 WILL NOT be bumped up to an 85, etc. The mark attained is the mark you achieved, and the mark assigned; requests for mark “bumping” will be (politely) denied.

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 Academic Accommodation for Students with Disabilities policy can be found at:
Academic Consideration for Student Absence

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) Submitting a Self-Reported Absence (SRA) form provided that the conditions for submission are met. To be eligible for a Self-Reported Absence:

- an absence must be no more than 48 hours
- the assessments must be worth no more than 30% of the student’s final grade
- no more than two SRAs may be submitted during the Fall/Winter term

(ii) 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.

(iii) 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, unless otherwise instructed in the course outline.

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 that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office of a student's Home Faculty.

For 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 of 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 the University’s list of recognized religious holidays (updated annually) at https://multiculturalcalendar.com/ecal/index.php?s=c-uniwo

Absences from Final Examinations

If you miss a 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” (see http://www.registrar.uwo.ca/examinations/exam_schedule.html).

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 (under Special Examinations).
Academic Policies

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

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 e-mail received from the University at his/her/their 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.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to The University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (http://www.turnitin.com).

In the event of a health lock-down, remote proctoring software may be used in this course for midterm tests. 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

Professionalism & Privacy

Western students are expected to follow the Student Code of Conduct. Additionally, the following expectations and professional conduct apply to this course:

- Students are expected to follow online etiquette expectations provided on OWL
- All course materials created by the instructor(s) are copyrighted and cannot be sold/shared
- Recordings are not permitted (audio or video) without explicit permission
- Permitted recordings are not to be distributed
- Students will be expected to take an academic integrity pledge before some assessments
- All recorded sessions will remain within the course site or unlisted if streamed

Copyright Statement

Please be aware that all course materials created by the instructor(s) are copyrighted and cannot be sold/shared. Those include materials used in tests/quizzes, assignments, midterms, and finals. Any posting/sharing of such materials in part or whole without owner’s consent is considered as violation of the Copyright Act and will be considered as a scholastic offence.

In addition, online services such as Chegg are actively monitored. Any questions that are coming out during midterms and finals and are posted to an online service will be searched. Such an activity will be considered as a scholastic offence and will result in academic penalty.
Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on add/drop 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 Student Accessibility Services (SAS) at (519) 661-2147 if you have any questions regarding accommodations.

Western University is committed to a thriving campus as we deliver our courses in the mixed model of both virtual and face-to-face formats. We encourage you to check out the Digital Student Experience website to manage your academics and well-being: https://www.uwo.ca/se/digital/

Learning-skills counsellors at the Student Development Centre (http://www.sdc.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.

Students who are in emotional/mental distress should refer to Mental Health@Western (http://www.health.uwo.ca/mental_health) 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.