Western Science

Department of Biology
and
Department of Statistical and Actuarial Sciences
Biology/Statistics 2244B – "Statistics for Science"

Course outline for Summer Distance 2022

THRIVE together

Western University is committed to a **thriving campus**. We encourage you to check out the Digital Student Experience website to manage your academics and well-being. Additionally, the following link provides available resources to support students on and off campus: https://www.uwo.ca/health/.

Technical Requirements

Stable internet connection

Laptop or computer

Important Dates

Classes Start	Drop Deadline*	Classes End	Exam Period
June 20	July 18	July 29	August 2-5

*Last day to drop a 6-week, second-term, Summer Distance half-course (0.5) without academic penalty.

Course Information

Biology/Statistics 2244B, section 650, SU22

An introductory course in the application of statistical methods, intended for students in departments other than Statistical and Actuarial Sciences, Applied Mathematics, Mathematics, or students in the Faculty of Engineering. Topics include sampling, confidence intervals, analysis of variance, regression and correlation. Cannot be taken for credit in any module in Statistics, Actuarial Science, or Financial Modelling.

List of Prerequisite(s)

A full (1.0) mathematics course, or equivalent, numbered 1000 or above. Statistical Sciences 1024A/B can be used to meet 0.5 of the 1.0 mathematics course requirement.

List of Antirequisite(s)

All other courses in Introductory Statistics (except Statistical Sciences 1023A/B, Statistical Sciences 1024A/B): Economics 2122A/B, Economics 2222A/B, Geography 2210A/B, Health Sciences 3801A/B,MOS 2242A/B, Psychology 2810, Psychology 2820E, Psychology 2830A/B, Psychology 2850A/B, Psychology 2851A/B, Social Work 2207A/B, Sociology 2205A/B, Statistical Sciences 2035, Statistical Sciences 2141A/B, Statistical Sciences 2143A/B, Statistical Sciences 2858A/B, Statistical Sciences 2037A/B if taken prior to Fall 2010, former Psychology 2885 (Brescia), former Statistical Sciences 2122A/B, former Social Work 2205.

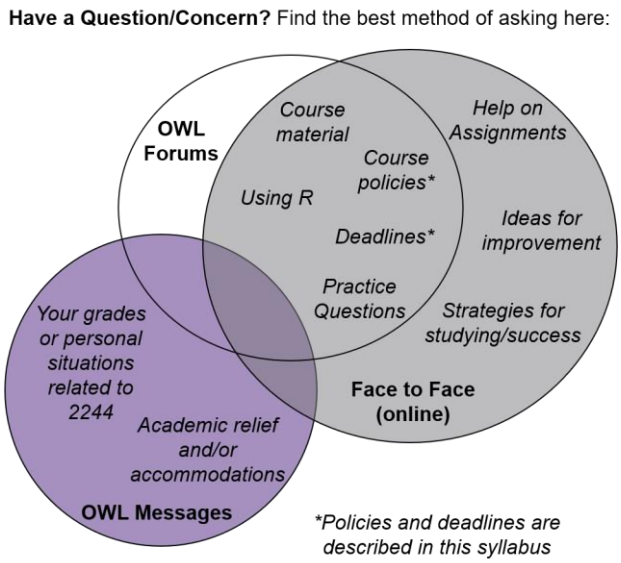
Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped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

Instructor Information

Course Coordinator
Jennifer Peter

Contact Information
Use *OWL Messages* to Jennifer Peter (Instructor)

My email address is too close to someone else's; using OWL Messages avoids lost/misdirected communications and helps me organize my inbox. It also ensures that you use your UWO contact information to connect with me.



Student Hours
Student hours (times through Zoom to meet with your instructor to get help, etc.) will occur at regular times weekly, as determined by a student poll during the first days of term.

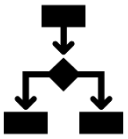
Course Schedule and Delivery Mode

Universal Design for Learning

UDL

This course has been designed using the principles of **Universal Design for Learning** ("UDL"), 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: course content will be available in multiple formats, some assessments will offer a choice of topic/approach, and, diagnostic assessments will be available for most course topics to help you efficiently allocate your time for learning the course material. One major side effect of this design is that it will look like there is a lot to do for the course. Keep in mind that some of the available content will be redundant and is available simply to support your preferred learning approach or interests. **Ask questions if you are unclear what is required vs. optional!**

Delivery of course material



This course is timetabled as a "Summer Distance Studies" course (section 650). That means that **all** lecture and lab content, and **all** assessments (including exams) occur online. This means that having a reliable internet connection, and dedicated access to a laptop or computer is a necessity for the course. With the exception of a few assessments (detailed later in this syllabus) and online help sessions, all course material will be delivered **asynchronously**. So, you can cover the course material and work on *most* assessments at the time that works best for your personal schedule. **Check the course timetable for the dates/times of any synchronous assessments.**

[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.

Learning Outcomes

This course is meant to be both introductory and comprehensive, conceptual and practical. At a fundamental level, the course is organized to ***demonstrate that statistics is a scientific discipline that can and should inform research at all stages***, from problem definition to data interpretation and conclusion. To reinforce this over-arching learning outcome, the course topics are organized around a "backbone" based on the PPDAC framework for scientific inquiry (MacKay and Oldford 2000).

More specifically, by the end of the course, a successful student should be able to:

Design sampling and study procedures to collect relevant data addressing a research question.	• Distinguish among common sampling and study designs. • Identify issues associated with sampling and study design (e.g. bias, validity, confounding, control, reproducibility, power/effect size) • Identify relevant inference procedures based on research question, and, type and number of variables.
Create and interpret appropriate summaries of data.	• Select summaries based on research question and variables. • Interpret summaries to identify and/or describe patterns, trends, and interesting features in data.
Analyse data using inference procedures to address a research question.	• Select appropriate inference procedures for a research question. • Interpret and describe confidence intervals and hypothesis test results. • Evaluate the fit of models for common parametric inference procedures. • Recognize situations and data that may require alternative (i.e. not covered in this course) inference procedures.
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 common parametric inference procedures, 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).
Describe models and/or conceptual background for common inference procedures.	• Describe the models for common inference procedures. • Describe sampling distributions (based on simple random samples) for commonly used statistics (e.g. mean, proportion).

Course timetable

Some adjustments to this timetable may be made based on our progression through the material; any changes to due dates will be announced on OWL.

Week	Lecture/Lab Topics	Assignments due Fri at 11:55 pm EST	Activities due Friday at 11:55 pm EST *Not all of these are required!	Test
June 20-24	PPDAC: A scientific inquiry framework Sampling designs & considerations Study designs & considerations Lab 1: Getting to know R		• **Core** Activity 1: issues with sampling • Reflection 1: planning • Application 1: Sampling & study designs	
June 27-July 1	Planning ahead: Sampling variability Summarizing & Exploring Data Probability Models & Vocabulary Lab 2: Working with Data in R Lab 3: R script and R markdown files	**Assignment 1**: Problem and Plan	• R Practice 1: working with RMD files • Application 2: data summaries	
July 4-8	Probability Models: Binomial models Probability Models: Normal models Sampling distributions Lab 4: Summarizing & Visualizing Data in R	**Data Skills Project:** Phase 1	• **Core** Activity 2: sampling distributions • R Practice 2: summarizing data	**Test**: Sunday, July 10th between 4-10 pm EST
July 11-15	Understanding confidence intervals t confidence interval for the mean Large sample confidence interval for proportion Understanding null hypothesis testing Lab 5: t procedures for means in R Lab 6: large sample procedures for proportions in R	**Assignment 2**: Data	• Reflection 2: test debrief	
July 18-22	Large sample test for the proportion t test for the mean t test for difference in means Large sample test for difference in proportions Lab 7: two sample procedures in R		• **Core** Activity 3: issues in hypothesis testing • R Practice 3: analysing data • Application 3: selecting analyses	
July 25-29	Simple linear regression One-factor ANOVA Lab 8: Linear regression in R Lab 9: One-factor ANOVA in R	**Assignment 3**: Analysis & Conclusion **Data Skills Project:** Phase 2	• Reflection 3: course reflection	
Aug 1-5	**Final Exam** (scheduled by Registrar between Aug 2-5)			

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 2244B 650 SU22") is used heavily; students are responsible for checking the site on a regular basis. It provides:

- Lecture and lab materials
- Assignment instructions and materials
- Access to graded assessments
- Practice questions
- Communication tools (Zoom, OWL Messages, Forums)

The **Lab** component of the course requires using the statistical software program **R** and the integrated development environment, **R Studio** to work with data and communicate. Both software packages are free to download to your personal computer (*best experience*) or for limited use through a browser (*if necessary*). Instructions for downloading/accessing R and R Studio is on the OWL site as part of Lab 1.

If you are the type of student who finds having a textbook helpful, the recommended course textbook is: Baldi, B. and DS. Moore. 2018. ***The Practice of Statistics in the Life Sciences.*** **4th Ed.**, W.H. Freeman and Company. This book is available in hard copy, or as an ebook on the platform "**Achieve"** (a limited term subscription, cheapest through the UWO Bookstore). I also provide suggestions for open-access (i.e. free) equivalents for many course topics where possible. **The textbook is NOT required.**

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. Ensure your browser is up-to-date.

Methods of Evaluation

This course uses a combination of more traditional grading schemes and ***Specifications Grading***; the information provided below should be sufficient to understand how your grade will be calculated. However, if at ANY time you are uncertain on how your grade is determined, or what is required to earn credit for the course, **ask for clarification.** If you're interested in learning more about "Specs Grading" in general, there's a great blog post about it available here.

Overview

Your course grade is determined through a combination of the ***quality*** and ***quantity*** of the work you submit. Your grade is composed of two (2) components:

1. Your ***'Base Grade'*** *(55%)*; the Base Grade is determined by your level of achievement on the learning outcomes assessed on the Assignments, and your achievement on the Test and Final Exam. The Base Grade is an implementation of Specifications Grading.

2. Your ***'Grade Increments'*** which add additional percentage points onto your Base Grade using elements of a more traditional grading approach, based on your success on:
    - the *Test* (10%)
    - the *Final Exam* (20%)
    - the *Data Skills Project* (7%)
    - the *Activities* (8%)

Determining your Base Grade

Your Base Grade is based on achievement on the set of three (3*) Assignments* in the course, and the *Test* and *Final Exam*. The learning outcomes assessed through the Assignments are graded on a 4-level rubric using **M** = Mastery, **P** = Proficient, **A** = Approaching Proficiency, **N** = Not met. The number of **M**, **P**, **A**, and **N** levels you achieve (and hence, the number of learning outcomes for which you demonstrate proficiency) is a major determinant of your Base Grade. This is combined with a minimum grade requirement for the *Test* and *Final Exam* incorporated into each Base Grade. Your final Base Grade will be based on the highest graded 'bundle' of accomplishments that you fulfill ***in its entirety***.

To earn:	**Achieve ALL of the following specifications:**
55	• earn a grade of at **least 85%** on each of the *Test* and *Final Exam* • earn level **M** for **all** learning outcomes • submit all **3** Assignments
50	• earn a grade of **at least 75%** on each of the *Test* and *Final Exam* • earn **no more than 1** level **A** and no level **N** on learning outcomes • earn **at least 4** level **M** on learning outcomes • submit all **3** Assignments
45	• earn a grade of **at least 65%** on each of the *Test* and *Final Exam* • earn **no more than 2** level **A** and no level **N** on learning outcomes • earn **at least 1** level **M** on learning outcomes • submit all **3** Assignments
40	• earn a grade of **at least 50%** on each of the *Test* and *Final Exam* • earn **no more than 3** level **A** and no level **N** on learning outcomes • submit all **3** Assignments
35	• earn a grade of **at least 50%** on the *Final Exam* • earn **no more than 5** level A and no level N on learning outcomes, **OR**, earn **no more than 3** level A and **no more than 1** level **N** learning outcomes • submit all **3** Assignments

Failing to meet the specifications for the 35 Base Grade will result in a *final course grade* of 45% being assigned, regardless of success on other graded components of the course. This means that the *minimum* that must be achieved to be eligible to earn credit (i.e. 'pass'/50%) in Biology/Statistics 2244 is the specifications for the 35 Base Grade. This defines the "Essential Requirements" for the course.

Determine your Grade Increments

Up to 45% could be added to the Base Grade earned, according to your achievement with the *Activities, Test*, *Final Exam*, and *Data Skills Project*.

Activities Increment. The *Activities* can earn you up to 8% of your final course grade. The fraction of this 8% that you earn is based on which set of achievements you fulfill in their entirety:

To earn:	Achieve ALL of the following specifications:
8%	• earn credit for all three (3) Core Activities • earn credit for one (1) non-core Activity from each of the three categories: R practice, Reflection, and, Application • earn credit for at least one other non-core Activity (from any of the categories)
5%	• submit all three (3) Core Activities, and earn credit for at least two (2) of the Core Activities • earn credit for one (1) non-core Activity from each of the three categories: R practice, Reflection, and, Application
3%	• earn credit for any five (5) Activities of your choice (no restrictions on the type/category)

Failing to meet the specifications for the 3% *Activities Increment* will simply result in an *Activities Increment* of 0 out of the possible 8%. Note that there are no intermediate levels (for example, no possibility to obtain 6%).

Test Increment. The *Test* is assigned 10% of your final course grade; you earn a fraction of the 10% according to the following formula:

$$\frac{achieved\ grade\ on\ Test}{total\ possible\ marks\ for\ Test} \times 10\%$$

Final Exam Increment. The *Final Exam* is assigned 20% of your final course grade; you earn a fraction of the 20% according to the following formula:

$$\frac{achieved\ grade\ on\ Exam}{total\ possible\ marks\ for\ Exam} \times 20\%$$

Data Skills Project Increment. Achievement on the *Data Skills Project* can earn you up to 7%. This *Increment* is computed as:

$$\frac{points\ earned\ for\ Phase\ 1 + points\ earned\ for\ Phase\ 2}{total\ possible\ points\ for\ Project} \times 7\%$$

For example, if Phase 1 was graded out of 20 points, and you earned 15, and Phase 2 was graded out of 50 points, and you earned 35, then your *Data Skills Project Increment* will be:

$$\frac{15 + 35}{20 + 50} \times 7\% = 5.00\%$$

Assessment Descriptions

There are five (5) types of Assessment used in this course. Each will be described briefly in this section; more comprehensive details, including definitions of what is required to earn credit and grading rubrics/expectations will be provided on the OWL course site.

Assignments.

WHY? The *Assignments* are created to demonstrate your mastery on a subset of the course-learning outcomes (see **page 4** in this syllabus) in an authentic manner, including your use of the statistical software, R.

WHAT? There are three (3) *Assignments*, each composed of a couple short answer questions requiring written responses (possibly including graphs/tables and/or R code and output). The *Assignments* move

progressively through the stages of the PPDAC framework[2], and involve answering questions that relate to an overall research objective and set of related research questions.

HOW? The majority of the *Assignments* will be submitted as an R markdown file (.RMD), and resulting knitted .PDF file. Both files must be uploaded to the OWL "Assignments" tool, AND the .PDF file must be uploaded to Gradescope.ca.

ESSENTIAL REQUIREMENT. Completion ALL three (3) *Assignments* and earning no more than 5 level A (and no level N) on learning outcomes, or, earning no more than 3 level A and no more than 1 level N on learning outcomes is part of the 'Essential Requirements' to be eligible to earn credit (i.e. 50% or higher as a final course grade) for the course. Failing to meet the Essential Requirements with respect to Assignments will result in a final course grade recorded as 45% (or, your calculated course grade—whichever is lower).

Activities.

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

WHAT? There are twelve (12) *Activities* planned from which students can **choose a subset** to complete (which *Activities* and how many are chosen for completion depends on the grade you are working towards in the course). There are two main types of *Activities*: (i) **3** "Core" *Activities* which deal with important course concepts and require more work and critical thinking, and (ii) other non-core *Activities* (typically shorter). The Core *Activities* will be labeled as such. The non-core *Activities* are organized into different classes (Reflection, R Practice, or Application) based on the type of exercise they involve.

HOW? The method of completion and submission varies depending on the particular *Activity*. There are, however, two main submission methods that will be used: (i) uploading to OWL "Assignments" tool and Gradescope, and (ii) as a 'quiz' through OWL "Tests and Quizzes" tool. The proper submission method and requirements for earning credit for an *Activity* will be detailed on OWL in the description of each *Activity*.

Data Skills Project.

WHY? Introductory statistics courses should give students opportunity to work with real, multivariate data and apply practical skills using statistical software. The *Data Skills Project* provides an opportunity for students to develop some research questions of interest to them, and visualize and analyse real data in R to answer those questions.

WHAT? You will create a file that includes information relevant to a metadata file, and a series of research questions that can be answered by a previously collected dataset. Using the statistical software R, you will generate relevant graphs/summaries and conduct appropriate inference procedures to answer the research questions. There are two (2) points in the term where parts of the *Data Skills Project* will be due; these are referred to as 'Phases' for submission.

HOW? The *Data Skills Project* will be submitted as an R markdown file (.RMD) and knitted to a .PDF. Both files must be uploaded to the OWL "Assignments" tool, AND the knitted .PDF file must be uploaded to Gradescope.ca

Test.

WHY? The *Test* serves as a relatively low-weight opportunity to demonstrate your understanding, application, and integration of the course material from the first 'half' of the course, allowing assessment of your mastery of the course learning outcomes.

[2] Mackay, R.J., and R.W. Oldford. 2000. Scientific method, statistical method, and the speed of light. Statistical Science 15(3): 254-278.

WHAT? One *Test* composed of a couple short answer and/or multiple choice questions, which may involve calculations, drawings, etc. The Test is closed book *unless* otherwise specified in the description on OWL. Students may use non-programmable calculators.

HOW? The *Test* will be conducted online, semi-synchronously (i.e. during a pre-scheduled time window).

Final Exam.

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

WHAT? A **cumulative** exam with several short answer questions and/or multiple choice questions, which may involve calculations, drawings, data analysis/interpretation, and potentially use of R. The *Final Exam* is closed book *unless* otherwise specified in the description on OWL. Students may use non-programmable calculators.

HOW? The *Final Exam* will be conducted online, semi-synchronously (i.e. during a pre-scheduled time period, as determined by the University Registrar). More details will be posted on OWL once the exam date is determined.

ESSENTIAL REQUIREMENT. Earning a passing grade (50% or higher) on the *Final Exam* is an 'Essential Requirement' to be eligible to earn credit (i.e. 50% or higher as a final course grade) for the course. Failing to meet the Essential Requirements with respect to the Final Exam will result in a final course grade recorded as 45% (or, your calculated course grade—whichever is lower).

Accommodated Evaluations

All *Assignment*, *Activity*, and *Data Skill Project* deadlines have an automatic 48-h 'grace period'. That is, if you cannot make the original deadline set, you will have an additional 48-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 48 hours to get these assessments submitted, simply take it—no questions asked. Beyond that 48-h grace period, late Activities *without* accommodation will not be accepted. Late Assignments or Data Skills Projects will be accepted with a late penalty per 24 h or part thereof. Missed assessments will not be accommodated except as described above. There is no limit on the number of assessments for which you 'use' the 48-h grace period.

Note that the 48-h grace period does NOT apply to the *Test* or the *Final Exam*.

Beyond the 48-h grace period, 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 these accommodations are handled depends on the assessment item being accommodated, as described below.

- **Self-reported Absences (SRAs)** generally result in a new deadline for an assessment that is 24 h after the end of the period accommodated by the SRA. However, review the information below for details related to specific types of assessments.
- ***Assignments, Data Skills Project Phases***, and ***Activities*** all have the automatic 48-h grace period on their deadlines. Consequently, a Self-Reported Absence (SRA) will **not result** in any additional deadline extension or accommodation. Students unable to submit any of these assessments by the end of the 48-h grace period should request accommodation through Academic Counseling.
- An ***Assignment*** granted an extended deadline accommodation through Academic Counseling (i.e. beyond that described in the point above) should be discussed with your instructor via OWL Message to identify a suitable deadline. If the Assignment accommodation period extends beyond the point at

which the graded Assignment is returned to the class, then an INC will be issued for the course grade. The missed Assignment will be completed the next time the course is offered.

- Self-Reported Absences or accommodation through Academic Counseling for the ***Test*** will result in eligibility to write a make-up Test (tentatively scheduled for July 15 between 4 pm and 10 pm EST). Accommodation that covers the period of the make-up ***Test*** may result in a reweighting of other components of the course or some other accommodation determined as equivalent by the instructor.
- ***Non-core Activities*** will not be accommodated; a student missing the deadline for a non-core Activity can simply complete a different non-core Activity that is still available (i.e. with a deadline that has not yet passed). It behooves students to complete *Activities* throughout the course, rather than waiting until the last weeks in the course to submit *Activities.*
- A ***core Activity*** granted an extended deadline accommodation through Academic Counseling should be discussed with your instructor via OWL Message to identify a suitable deadline. If the accommodation period extends beyond the point at which the graded core Activity is returned to the class, alternative arrangements will be made to fulfill the learning outcomes of the *core Activity*.

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

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. Similarly, requests for alternative assessments or submission of revisions of assessments to increase marks will be 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:
https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic Accommodation_disabilities.pdf

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 one SRA may be submitted during the Summer 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. **For 2244:** when submitting a Self-

Reported Absence, please do NOT send a follow-up email. Instructions on how to manage Self-Reported Absences will be communicated in advance of all deadlines; simply follow those instructions.

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 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

Students should consult the University's list of recognized religious holidays, and should give reasonable notice in writing, prior to the holiday, to the Instructor and an Academic Counsellor if their course requirements will be affected by a religious observance. Additional information is given in the Western Multicultural Calendar: 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 (under Special Examinations).

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.

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).

Computer-marked multiple-choice tests and exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

Personal response devices ("clickers") may be used in this course for the purpose of engagement during in-person learning and/or to provide informal feedback to your instructor about student understanding. Clicker use will not contribute to course grades. Any personal data collected (e.g. student usernames/identification and responses to clicker questions) will be treated like other confidential course-related data.

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

Some of the remote learning sessions for this course may be recorded.

The data captured during these recordings may include your image, voice recordings, chat logs and personal identifiers (name displayed on the screen). The recordings will be used for educational purposes related to this course, including evaluations. The recordings may be disclosed to other individuals participating in the course for their private or group study purposes. Please contact the instructor if you have any concerns related to session recordings.

Participants in this course are not permitted to record the sessions, except where recording is an approved accommodation, or the participant has the prior written permission of the instructor.

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, activities, 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 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.