Western Science

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

Course outline for Intersession 2021

THRIVE together

Although this academic year might be different, 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

Working microphone (recommended)

Important Dates

Classes Start	Drop Deadline*	Classes End	Exam Period
May 10	May 31	June 18	June 21-22

*Last day to drop a 6-week first-term half-course (0.5) without academic penalty.

Course Information

Biology/Statistics 2244A, section 001 SP21

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.

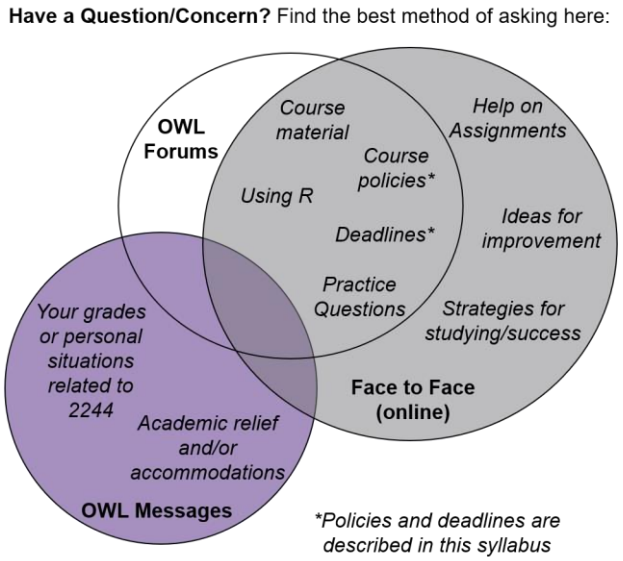
Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped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

Instructor Information

Course Coordinator
Jennifer Peter

Contact Information
Use *OWL Messages* to Jennifer Peter

My email address is too close to someone else's; using OWL Messages avoids lost/misdirected communications and helps me organize my inbox.



Course Schedule and Delivery Mode

Delivery of course material

Component	Mode	Days/Times	Frequency
Lectures	Asynchronous online	n/a	weekly
Application sessions	Synchronous online	Mon/Wed: 6:30–8:30 pm	see timetable
Assignment/R Help	Synchronous online	To be determined	weekly
Student Hours	Synchronous online	To be determined by poll	weekly

The course material—**both lectures and labs**—is taught through a combination of asynchronous, interactive lecture videos; short readings; and simulations. So, while there are 'lecture' (Mon/Wed 6:30-8:30 pm) and 'lab' periods (Thursdays 6:30-9:30 pm) in your course timetable, we will not use these scheduled periods for lectures or labs.

There will be two types of ***optional*** synchronous online sessions (see timetable below):

(i) TA-facilitated "Assignment/R help" sessions during which you can ask questions about the Assignments and using the software, R. During some weeks, these sessions will occur during scheduled lab section periods, while in other weeks, the sessions will occur outside of the lab section period;
(ii) Instructor-facilitated "Application sessions" during which you can join small- and large-group activities that involve *applying* the course concepts that you are learning. You are strongly encouraged to attend the "Application sessions", as they provide insight into the expectations related to the Assignments/Exams, and provide an opportunity to interact with other students and your instructor.

In addition, the weekly 'Student Hours' will be times to 'drop in' to chat with your instructor about the course material, ask questions, etc. ***All synchronous components will be held via Zoom.***

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 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) • Identify relevant inference procedures based on research question and 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 inference procedures. • Identify situations and data that 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 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 convential 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. • Discuss and describe issues associated with inference (e.g. power, precision, Type I/II errors).

Course timetable

The course material is best organized by ***topic*** rather than week, with the appropriate flow of topics illustrated in the table below.

Week	Topic	Application sessions	Assignments due	Activities available (class)
May 10-16	PPDAC: A scientific inquiry framework Sampling designs & considerations Study designs & considerations Lab 1: Getting to know R	Mon: Understanding 2244		**CORE:** Representativeness of sampling Week 1 Reflection (iv) Time map (iv) Practice quizzes
May 17-23	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	Mon: 1-Planning sampling & study designs	• Wed: Quiz 1 • Fri: Assignment 1: *Problem & Plan* due • Fri: Resource File *phase 1* due	Summaries summary (i) Application session follow-up 1 (iii) Muddiest Point (iv) R practice: working with data (ii) Practice quizzes
May 24-30	Probability Models: Normal models Probability Models: Binomial models Sampling distributions Lab 4: Summarizing & Visualizing Data in R	Mon: 2-Selecting summaries	• Fri: Assignment 2: *Data* due	**CORE:** Sampling distributions of means Week 3 reflection (iv) R practice: Summarizing Data (ii) Application session follow-up 2 (iii) Practice quizzes
May 31-June 6	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	Mon: 3-Selecting models	• Wed: Quiz 2 • Fri: Resource File *phase 2* due	**CORE**: Confidence intervals Muddiest Point (iv) Practice quizzes
June 7-13	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		• Fri: Assignment 3: *Analysis & Conclusion* 1 due	Week 5 Reflection (iv) R practice: inference (ii) Describing data (i) Practice quizzes
Jun 14-18	Simple linear regression One-factor ANOVA Lab 8: Linear regression in R Lab 9: One-factor ANOVA in R	Mon: 4-Selecting a procedure	• Wed: Quiz 3 • Fri: Assignment 4: *Analysis & Conclusion* 2 due • Fri: Resource File *phase 3* due	Course Reflection (iv) Sampling distributions summary (i) Application session follow-up 3 (iii) Practice quizzes
June 21-22	Exam Period		Take Home Exam	

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, "BIOL 2244A 001 SP21") is used heavily; Students are responsible for checking the site on a regular basis. It provides:

- Lecture and lab materials
- Info on assigned readings
- Assignment instructions and materials
- Access to Activities and other graded components
- Practice questions
- Communication tools

The **Lab** component of the 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.

You might find having a text resource is helpful. The 'official' 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 ebook on the platform "**SaplingPlus"** (a 6-month subscription, cheapest through the UWO Bookstore).
I also provide open access (i.e. free) equivalents for course topics where possible.

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.

If you need assistance with R, your instructor and TAs (during scheduled sessions) can help; there is also a WEALTH of online knowledge just a Google search away for R.

If you are using SaplingPlus and need help, their student support has historically been great: https://store.macmillanlearning.com/ca/content/get-help

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]. As a consequence, you will encounter choice for many parts of the course. For example, some course material will be available in interactive 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 that do not contribute to your grade) may be available at the start of some course topics to help you determine what you already know about the topic, 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

This course uses a form of ***Specifications Grading***; the information provided below PLUS the discussion on the first day of the course) should be sufficient to understand how your grade will be calculated. If you're interested in learning more about "Specs Grading" in general, there's a great blog post about it available here. If at any time you are uncertain how your grade is determined, **ask for clarification!**

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'*** of 45% (F), 50%, 60%, or 65%; the base grade is determined by the grades earned on *Assignments* and the *Activities* you successfully complete, as well as your success on the *Take Home Exam*, and.
2. Your ***'grade increments'*** which add additional percentage points onto your base grade, based on your success on:
    - the three *Quizzes* (15% total)
    - the *Take Home Exam* (10%)
    - the *Resource File Project* (10%)

The details of how the two components are graded are described below. An overview of the nature of the course assessments (i.e. what are Activities? What is involved in an Assignment?, etc.) is given on **page 8** of this syllabus.

Determine your Base Grade

Your Base Grade is based on the highest graded 'bundle' of accomplishments that you fulfill in its entirety.

To earn:	**Accomplish ALL of the following:**
65%	• submit all four (4) *Assignments* • earn a grade of at **least 85%** on each of the four (4) *Assignments* • earn credit for all 3 **core** *Activities* • earn credit for 1 *Activity* from **each** of the following non-core *Activity* classes: (i) Summaries, (ii) R practice, (iii) Application sessions, (iv) Reflections • earn credit for 3 additional non-core *Activities* of your choice • earn a grade of at **least 80%** on the *Take Home Exam* (see note * below)
60%	• submit all four (4) *Assignments* • earn a grade of at **least 75%** on **at least 3** of the four (4) *Assignments* • submit all **3** core Activities and earn credit for **at least 2** of the 3 **core** *Activities* • earn credit for 1 *Activity* from each of the following non-core *Activity* classes: (i) Summaries, (ii) R practice • earn credit for 2 additional non-core *Activities* of your choice • earn a grade of at **least 70%** on the *Take Home Exam* (see note * below)
50%	• submit all four (4) *Assignments* • earn a grade of at **least 60%** on **at least 3** of the four (4) *Assignments* • earn credit for **at least 6** *Activities* of your choice • earn a grade of at **least 50%** on the *Take Home Exam* (see note * below)
45% (F)	A final course grade of 45% will be assigned if the requirements for the 50% Base Grade are not met, regardless of what is achieved for the 'Grade Increments' component.

*****Failing to meet the specified minimum grade for the *Take Home Exam* will result in a 5% deduction from the base grade (assuming all other requirements for the Base Grade are met). For example, a student working towards a Base Grade of 60% who does not earn at least 70% on the *Take Home Exam* will earn a Base Grade of 60% – 5% = 55% (to which their increment points will be added as normal).

Determine your Grade Increments

Up to 35% could be added to the Base Grade earned, according to your achievement with the *Quizzes*, *Take Home Exam*, and *Resource File Project*.

Take Home Exam Increment. Any achievement on the *Take Home Exam* above the required minimum mark for your Base Grade can earn you up to an additional 10%. Remember that each Base Grade level has a minimal requirement for the *Take Home Exam* mark (e.g. Base Grade of 65% requires a minimum of 80% on the *Take Home Exam*).

The *Take Home Exam Increment* rewards achievement *above* the minimal requirement for the Base Grade. This Increment is computed as the portion of 10% proportional to your success above the minimal requirement, according to the following calculation:

$$\frac{achieved\ exam\ grade - minimum\ required\ by\ base\ grade}{100\% - minimum\ required\ by\ base\ grade} \times 10\%$$

For example, a student with a Base Grade of 65% who earns a 90% on the *Take Home Exam* will receive a *Take Home Exam Increment* of

$$\frac{90\% - 80\%}{100\% - 80\%} \times 10\% = 5\%$$

In situations where the exam grade is *less than* the minimum required exam grade dictated by the Base Grade, no increment (i.e. 0%) will be awarded. The 5% deduction to the Base Grade described at the top of this page will be applied.

Resource File Increment. Achievement on the *Resource File Project* can earn you up to a 10%. This *Resource File Increment* is computed as:

$$\frac{achieved\ resource\ file\ grade}{total\ possible\ marks\ for\ resource\ file} \times 10\%$$

For example, if the *Resource File Project* is marked out of 40 points and a group earns 33 of those points, then the *Resource File Increment* will be:

$$\frac{33}{40} \times 10\% = 8.25\%$$

Quizzes Increment. Each *Quiz* is assigned 5% from the total 15% allocated to the *Quizzes Increment*; for each *Quiz*, you earn a fraction of the 5% according to the following formula:

$$\frac{achieved\ grade\ on\ Quiz}{total\ possible\ marks\ for\ Quiz} \times 5\%$$

Your final *Quizzes Increment* will be the sum of the mark out of 5% for each of the three *Quizzes*.

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 Satisfactory completion and grading rubrics/expectations will be provided on the OWL course site.

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 four (4) *Assignments*, each composed of (typically) 1–3 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? *Assignments* will be submitted as an R markdown file (.RMD), knitted to .PDF output (we learn about .RMD files and knitting in week 2). Both files must be uploaded to the OWL "Assignments" tool, AND the .PDF output file must be uploaded to Gradescope.

ESSENTIAL REQUIREMENT. Completion of all four (4) *Assignments* and earning at least 50% on at least 3 of the 4 Assignments 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 requirements for the Essential Requirement 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) summarization/practice of what you are learning.

WHAT? There are at least twenty-four (24) *Activities* available from which students can choose a subset to complete (which *Activities* and how many are chosen for completion depends on the Base Grade you are working towards). 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) many other, 'non-core' *Activities* (typically shorter, or less challenging). The core *Activities* will be labeled as such. The non-core *Activities* are organized into different classes, based on the type of exercise/work 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*.

Resource File Project.

WHY? The content of this course is meant to be practical, and ideally, useful for your future courses, research, and/or jobs. One of the more valuable skills you should finish the course with is proficiency in using the statistical software, R. The *Resource File Project* provides a collaborative opportunity to bring together practical skills in R and the 'conceptual' course material. Creating the *Resource File* should also serve as a method of reviewing/studying the course material, and, ideally, will result in a reference manual that may be useful for the *Take Home Exam*, and, after the course has finished.

WHAT? As a small group (i.e. 2-4 students), you will create a document that follows the PPDAC framework[2] for a novel dataset and research objective of your choosing, and demonstrates how to use the statistical software R to apply techniques (e.g. graphs, inference procedures, etc.) taught in the course. There are three (3) points in the term where parts of the *Resource File Project* will be due (to encourage continual work/planning towards the final project); these are referred to as 'phases' for submission.

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

HOW? The *Resource File Project* will be submitted as an R markdown file (.RMD) and knitted to a .PDF. Both files, plus any accompanying dataset, must be uploaded to the OWL "Assignments" tool, AND the .PDF output file must be uploaded to Gradescope.

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 working on the lecture and lab material on a regular basis.

WHAT? Three (3) **cumulative** *Quizzes*, each with a couple short answer and/or multiple choice questions, which may involve calculations in R. The *Quizzes* will be set with the expectation that a *prepared* student could complete the Quiz in approximately 15 minutes.

HOW? Unless otherwise described on the OWL course site, the *Quizzes* will be accessed, completed, and submitted through OWL Tests & Quizzes. These *Quizzes* will be timed assessments to be completed during a restricted availability period.

Take Home Exam.

WHY? The *Take Home Exam* 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? A **cumulative** exam with several short answer questions involving written responses as well as data analysis using R. The exam will be set with the expectation that a *prepared* student could complete the entire exam in 3-5 hours. You will, however, be given 12-h period of time to access, complete, and submit the exam (e.g. to accommodate differences in time zones and individual accommodations for learning).

HOW? The *Take Home Exam* 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 .PDF output file must be uploaded to Gradescope.

ESSENTIAL REQUIREMENT. Completion of the *Take Home Exam* is an 'Essential Requirement' to be eligible to earn credit (i.e. 50% or higher as a final course grade) for the course. Information on what will be considered 'completion' of the exam will be described on OWL. Failing to meet the requirements for this Essential Requirement will result in a final course grade recorded as 45%.

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 (i.e. *Assignments, Resource File Project, Activities,* and the *Quizzes*) 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:

- *Assignments, Resource File Project*, or *Activities* should be submitted within 24 hours of the submission of the end of the 48-h period covered by a Self-Reported Absence.
- An *Assignment* 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 has been returned to the class. If the Assignment accommodation period extends even beyond that timeframe, then an INC will be issued. The missed Assignment will be completed the next time the course is offered.
- When a group member for the *Resource File Project* has been granted a deadline extension, the Resource File 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.

- Accommodation for a *Quiz* will result in eligibility to write a make-up *Quiz*; the format of the make-up *Quiz* may be different from the original *Quiz* (e.g. it may not be administered through OWL Tests & Quizzes. Accommodation that covers the period of the make-up *Quiz* may result in a reweighting of other components of the course or some other accommodation determined by the instructor.

Note that missed non-core *Activities* are not accommodated; a student with accommodation for a non-core Activity deadline 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 term, rather than waiting until the last weeks in the course to submit *Activities*.

All *Assignment*, *Activity*, and *Resource File Project* deadlines 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 these Assessments submitted, simply take it—no questions asked. Beyond that 12-h grace period, late assessments *without* accommodation will not be accepted; similarly, missed assessments will not be accommodated except as described above. Note that the 12-h grace period does NOT apply to the *Quizzes* or the *Take Home Exam*.

Accommodation for the Take Home Exam. Accommodation granted for the time period of the Take Home Exam enables the student to write a make-up Take Home Exam (i.e. a special exam, "SPC"). One make-up Take Home Exam will be scheduled during the Summer Evening B term exam period (i.e. July 26-27, 2021). Students who are unable to write that make up (with additional accommodation) will write the final exam during the Fall term exam period (i.e. Dec 10-21, 2021). Accommodation for the Take Home Exam cannot result in an extension to the original exam deadline.

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.

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 will have one (1) opportunity during the Summer academic year (i.e. May to August) to use an on-line portal to self-report an absence during the term, provided the following conditions are met: the absence is no more than 48 hours in duration, and the assessment for which consideration is being sought is worth 30% or less of the student's final grade. Students are expected to contact their instructors within 24 hours of

the end of the period of the self-reported absence, unless noted on the syllabus. Students are not able to use the self-reporting option in the following circumstances:

- for exams scheduled by the Office of the Registrar
- absence of a duration greater than 48 hours,
- assessments worth more than 30% of the student's final grade,
- if a student has already used the self-reporting portal once during the summer term

If the conditions for a Self-Reported Absence are *not* met, students will need to provide a Student Medical Certificate if the absence is medical, or provide appropriate documentation if there are compassionate grounds for the absence in question. Students are encouraged to contact their Faculty academic counselling office to obtain more information about the relevant documentation.

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/Academic_Consideration_for_absences.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

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 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 official university address is attended to in a timely manner.

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 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.

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.

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.

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 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.