The University of Western Ontario

HS3801

Research Methods and Analysis in the Health Sciences

SUMMER 2023

Instructor: Michael Robinson PhD CAT(C) ATC
Email: mrobin7@uwo.ca
Office Hours: Appointments must be booked 24 hours in advance:
https://michaelrobinsonuwo.youcanbook.me/
Lectures and Labs: 1 pre-recorded lecture weekly with associated readings (available on OWL)

Prerequisite Checking
Prerequisite(s): Health Sciences 2801 or the former Health Sciences 2800.
Antirequisite(s): Biology 2244A/B, Economics 2122A/B, Economics 2222A/B, Geography 2210A/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 2244A/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 if you are dropped from a course for failing to have the necessary prerequisites.

Course Description
An introduction to measurement and analysis in health sciences research, covering topics such as validity, reliability, standard errors, confidence intervals, tests of means, correlation, and linear regression.

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

Course Materials
All course materials will be posted to OWL in advance of lectures. A reading list will be posted on OWL during the first week of the course. Lecture slides are intellectual property of the course instructor; copying without permission is copyright infringement and can constitute plagiarism.

There are no required textbooks for this course. If you wish to have a textbook for the course, I recommend the OpenStax text by Illowsky et al., and wherever possible, I've provided you with appropriate page ranges for our topics. The PDF of this text is available for free through OpenStax.org.

https://openstax.org/details/introductory-statistics

Attendance and Classroom Behaviour (online and/or in-person)
In the School of Health Studies, each course instructor sets specific expectations for attendance and participation that are specific to the course, teaching objectives, and learning outcomes. Regular attendance is expected and essential for all courses. **Students who miss classes, or parts of classes, are responsible for the material they have missed. Instructors are not obliged to review the contents of missed lectures**.

Methods of Evaluation

Examinations (100%):

Online quizzes	60% (6 quizzes at 10% each)
Final	40% TBD by University during the scheduled exam period.

The final exam is cumulative. Examinations will be comprised of a combination of multiple-choice questions, short and long answer and calculations.

Schedule (Subject to change)

	Lecture	Quiz	Optional Textbook Reference
June 19	Describing Data Hypothesis Testing	Quiz 1 Opens June 19 12:01 am	1.1, 2.1-2.8, 6.1-6.4 7.1-7.5, 8.1-8.6
June 26	Single Sample Inference t-test	Quiz 1 Closes June 26 11:55 pm Quiz 2 Opens June 26 12:01 am	9.1-9.6 10.1 10.4
July 3	Correlation and Regression	Quiz 2 Closes July 3 11:55 pm Quiz 3 Opens July 3 12:01 am	12.1-12.9
July 10	Count Data	Quiz 3 Closes July 10 11:55 pm Quiz 4 Opens July 10 12:01 am	11.1-11.2, 11.3, 11.5, 11.7, 11.8
July 17	ANOVA	Quiz 4 Closes July 17 11:55 pm Quiz 5 Opens July 1712:01 am	13.1-13.5
July 24	Pairwise comparisons	Quiz 5 Closes July 24 11:55 pm Quiz 6 Opens July 24 12:01 am Quiz 6 Closes July 28 11:55 pm	

ADDITIONAL POLICIES:

Remote Proctoring

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

Statement on Academic Offences:

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

Academic Consideration:

The University recognizes that a student's ability to meet their academic responsibilities may, on occasion, be impaired by extenuating circumstances, including short-term illness or injury. Reasonable academic consideration is a cooperative process between the University, the student, and academic staff. All participants in the process must act in good faith, and fulfil their respective obligations, if it is to succeed.

Students who experience an extenuating circumstance (illness, injury, or other extenuating circumstance) sufficiently significant as to temporarily render them unable to meet academic requirements, may submit a request for academic consideration through the following routes:

(i) For medical absences, submitting a Student Medical Certificate (SMC) signed by a licensed medical or mental health practitioner, in order to be eligible for Academic Consideration; or

(ii) For non-medical absences, submitting appropriate documentation (e.g., obituary, police report, accident report, court order, etc.) to academic advising office in their Faculty of registration, in order to be eligible for academic consideration.

Students seeking academic consideration:

- *Are advised to consider carefully the implications of postponing tests or midterm exams or delaying handing in work;*
- *Are encouraged to make appropriate decisions, based on their specific circumstances, recognizing that minor ailments (e.g., upset stomach) or upsets (e.g., argument with a friend) are not normally an appropriate basis for an SMC;*

- ***Are advised that all necessary documentation, forms, etc. are to be submitted to the academic advising office within two business days after the date specified for resuming responsibilities***

Support Services:

There are various support services around campus and these include, but are not limited to:

1. *Student Development Centre -- http://academicsupport.uwo.ca/*
2. *Student Health -- https://www.uwo.ca/health/*
3. *Registrar's Office -- http://www.registrar.uwo.ca/*
4. *Ombudsperson Office -- http://www.uwo.ca/ombuds/*

Health and Wellness:

The undergraduate experience is rewarding and challenging socially, emotionally, and intellectually. Finding ways to balance scholarly life with our personal lives can be tough, but it's important to learn how to manage stress. Western provides several health and wellness-related services to students, which may be found at http://www.health.uwo.ca/. You can also check out the Campus Recreation Centre or the McIntosh Gallery (http://www.mcintoshgallery.ca/), for alternative spaces to reconnect with your bodies and restore your spirit. You may also want to access local resources that are closer to where you are living during the school year. Recalibrating ourselves emotionally begins with slowing down, reminding ourselves that we are ok, and taking a few deep, slow breaths. This remarkably effective strategy brings the body from stress mode into a more relaxed state.

If you are in emotional or mental distress should refer to Mental Health@Western Mental Health Support - Health & Wellness - Western University (uwo.ca)for a complete list of options about how to obtain help. To help you learn more about mental health, Western has developed an interactive mental health learning module, found here: Health & Wellness - Western University (uwo.ca). It's also advisable to have a wellness safety plan if you don't want to reach out to formal services. Having the numbers of a few trusted individuals is another strategy.

Common Concerns:

Concern	How to address concern
Course administrative matters	Read through the course outline or email instructor is question cannot be answered from information in the course outline
Course content questions	Refer to the OWL Resources (notes, calendar, etc). Email the instructor.
Grade disputes and requests for appeals	A student requesting an appeal to a specific course with respect to a grade for an assignment or examination much first contact their instructor to discuss such manners. Visit the following website for guide on submitting an appeal: https://uwo.ca/fhs//policies/appeals.html

Grade policy:

The university-wide descriptor of the meaning of letter grades, as approved by Senate:

A+	90-100	*One could scarcely expect better from a student at this level*
A	80-89	*Superior work that is clearly above average*
B	70-79	*Good work, meeting all requirements and eminently satisfactory*
C	60-69	*Competent work, meeting requirements*
D	50-59	*Fair work, minimally acceptable.*
F	below 50	*Fail*

It is expected that the grades for this course will fall between 74-78. In the event that the course average falls outside this range, a constant may be added (or subtracted) from each student's grade, by the instructor, to bring the class average in line with school policy.