The University of Western Ontario
HS3801B
Research Methods and Analysis in the Health Sciences
January 2022

Instructor: Michael Robinson PhD CAT(C) ATC
Lecture Location: NCB-101
Email: mrobin7@uwo.ca
Office Hours: Mondays and Wednesdays from 11:30-12:30 via Zoom:
https://westernuniversity.zoom.us/my/mrobin7?pwd=QjY1VUK5V1FNZE5rVW9XRWMzQXg5UT09
Teaching Assistant: TBD

Communication: Please communicate any questions via email FIRST to the teaching assistants then to the course instructor if required. Please allow for 72 hours for a response.

Lectures and Labs
There is one combined in-person lecture and lab per week: Friday 8:30 – 11:30.

Prerequisite Checking
Prerequisite(s): Health Sciences 2801 or the former Health Sciences 2800.

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](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%):**

- Midterm 45% Feb 18th, 2022
- Final 55% TBD by University during the scheduled exam period.

Examinations will be comprised of up to 100 multiple choice questions and be administered in person. Final exams are cumulative.
# Schedule (Subject to change)

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friday, January 7, 2022</td>
<td>Introduction</td>
</tr>
<tr>
<td>Friday, January 14, 2022</td>
<td>Describing Data</td>
</tr>
<tr>
<td>Friday, January 21, 2022</td>
<td>Hypothesis Testing</td>
</tr>
<tr>
<td>Friday, January 28, 2022</td>
<td>Single Sample Inference</td>
</tr>
<tr>
<td>Friday, February 4, 2022</td>
<td>Correlation and Regression</td>
</tr>
<tr>
<td>Friday, February 11, 2022</td>
<td>Count Data</td>
</tr>
<tr>
<td>Friday, February 18, 2022</td>
<td>MIDTERM</td>
</tr>
<tr>
<td>Thursday, February 24, 2022</td>
<td>READING WEEK</td>
</tr>
<tr>
<td>Friday, March 4, 2022</td>
<td>t-test</td>
</tr>
<tr>
<td>Friday, March 11, 2022</td>
<td>t-test</td>
</tr>
<tr>
<td>Friday, March 18, 2022</td>
<td>ANOVA</td>
</tr>
<tr>
<td>Friday, March 25, 2022</td>
<td>ANOVA</td>
</tr>
<tr>
<td>Friday, April 1, 2022</td>
<td>Pairwise comparisons</td>
</tr>
</tbody>
</table>
ADDITIONAL STATEMENTS

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

Accommodation for illness:

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) Submitting a Self-Reported Absence form, provided that the conditions for submission are met;

(ii) 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

(iii) For non-medical absences, submitting appropriate documentation (e.g., obituary, police report, accident report, court order, etc.) to Academic Counselling 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 a self-reported absence;

• Must communicate with their instructors no later than 24 hours after the end of the period covered by either the self-reported absence or SMC, or immediately upon their return following a documented absence;

• Are advised that all necessary documentation, forms, etc. are to be submitted to academic counselling within two business days after the date specified for resuming responsibilities
Students who experience an unexpected illness or injury or an extenuating circumstance (48 hours or less) that is sufficiently severe as to temporarily render them unable to meet academic requirements (e.g., attending lectures or labs, writing tests or midterm exams, completing and submitting assignments, participating in presentations) should self-declare using the online Self-Reported Absence portal. This option should be used in situations where the student expects to resume academic responsibilities within 48 hours or less. The following conditions are in place for self-reporting of medical or extenuating circumstances:

a. Students will be allowed a maximum of two self-reported absences between September and April, and one self-reported absence between May and August;

b. The duration of the excused absence will be for a maximum of 48 hours from the time the Self-Reported Absence form is completed through the online portal, or from 8:30am the following morning if the form is submitted after 4:30pm;

c. The duration of the excused absence will terminate prior to the end of the 48 hour period, should the student undertake significant academic responsibilities (e.g., write a test, submit a paper) during that time;

d. The duration of an excused absence will terminate at 8:30am on the day following the last day of classes each semester, regardless of how many days of absence have elapsed;

e. Self-reported absences will not be allowed for scheduled final examinations; for midterm examinations scheduled during the December examination period; or for final lab examinations (i.e., “bellringers”);

f. Self-reporting may not be used for assessments (e.g., midterm exams, tests, reports, presentations, or essays) worth more than 30% of any given course;

g. Students must be in touch with their instructors no later than 24 hours after the end of the period covered by the Self-Reported Absence form, to clarify how they will be expected to fulfil the academic expectations they may have missed

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.

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 72-76. 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.