



Brescia University College  
LONDON CANADA

**Psych 2851B, Section 530**  
**Statistics for Psychology II**  
**Dr. C.M. Tenk**  
**2011-12**

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**COURSE DESCRIPTION**

This course expands on basic statistics with an aim at developing an understanding of the use and interpretation of statistics in more complex Psychological research designs. Topics include repeated samples testing, estimation, analysis of variance, correlation, simple linear regression and non-parametric tests.

**Prerequisites:** At least 60% in Psychology 2850A/B

**Antirequisites:** All University level statistics courses numbered 2000 or above, including Psychology 2810, 2820, 2830A, 2885.

**COURSE INFORMATION**

Instructor: Dr. Christine M. Tenk

Office: BR 211

E-mail: ctenk2@uwo.ca

Telephone: ext 28242

Office Hours: Monday 2:30 – 3:30pm, Wednesday 12 - 1pm, and by appointment

Time, Location of Classes: Monday 12:30 – 2:30pm, BR 204  
Wednesday 1:30 – 2:30pm, BR 204

Course Website: on WebCT Owl

**COURSE OBJECTIVES**

By the end of the course, students will be able to:

- a) Determine what statistical analysis is appropriate for a set of experimental data
- b) Perform appropriate statistical analyses for a variety of data sets including independent vs repeated measures, analysis of variance, correlation and non-parametric tests
- c) Understand and calculate statistical estimations as an alternative to the hypothesis test
- d) Compute a linear regression equation for a set of data
- e) Report and interpret statistical reports as they appear in scientific literature

**TEXTBOOK AND COURSE MATERIALS**

**Required:** Gravetter, F. J. & Wallnau, L. B. (2010). *Statistics for the Behavioral Sciences, 8<sup>th</sup> edition*. Thomson Wadsworth.

**Recommended:** Study Guide for Gravetter, F. J. & Wallnau, L. B. (2010). *Statistics for the Behavioral Sciences, 8<sup>th</sup> edition*. Thomson Wadsworth.

**CLASS SCHEDULE (tentative)**

| <b>Date</b>                    | <b>Topic</b>  | <b>Reading</b>                                 |
|--------------------------------|---|--|
| <b>Second Term</b>             |   |  |
| Jan. 9                         | Opening class   |  |
| Jan. 9, 11, 16                 | <i>t</i> Test for Related Samples                         | Ch. 11   |
| Jan. 18, 23                    | Estimation  | Ch. 12   |
| Jan. 25, 30, Feb. 1            | Introduction to ANOVA; <i>Assignment 2.1 due Jan. 30</i>  | Ch. 13   |
| Feb. 6, 8, 13, 15              | Repeated Measures ANOVA; <i>Assignment 2.2 due Feb. 8</i> | Ch. 14   |
| Feb. 20-24                     | Reading Week – No Classes                                 |  |
| <b>Feb. 27</b>                 | <b>Midterm</b>  | <b>Chapters 11 - 14</b>                        |
| Feb. 29, Mar. 5, 7             | Two Factor ANOVA  | Ch. 15   |
| Mar. 12, 14                    | Correlation; <i>Assignment 2.3 due Mar. 12</i>            | Ch. 16   |
| Mar. 19, 21                    | Regression  | Ch. 17   |
| Mar. 26, 28, Apr. 2            | Chi-square Statistic; <i>Assignment 2.4 due Mar. 28</i>   | Ch. 18   |
| Apr. 2, 4, 9                   | Tests for Ordinal Data; <i>Assignment 2.5 due Apr. 4</i>  | Ch. 20   |
| Apr. 11                        | Review/Study Day  |  |
| <b>April Exam Period (TBA)</b> | <b>Final exam</b>   | <b>Chapters 15 – 20 (excluding chapter 19)</b> |

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Topics will be covered in the order given above. *Approximate* lecture dates are listed so that you can keep up with the readings. You should do the assigned reading before that topic is covered in class. Omission of Chapter 19 is intentional.

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**CLASSROOM ETIQUETTE**

Welcome to Statistics for Psychology II! **In order to make the most of this learning experience for yourself and your fellow students, PLEASE**

- Do not use computers in class *for any reason*, except to take notes.

- Do not send or read e-mails/text messages/IM's during class time.
- Turn off cell phones.
- Refrain from speaking to a neighbour during class time (unless invited to do so by the instructor), especially if someone (either the instructor or a fellow class member) is speaking to the class.

These activities can be very distracting to your fellow students and to the instructor, and in that event, **you may be asked to leave the classroom**. I look forward to teaching you in Psych 2851 and wish you all the best for a great term! ~ *Dr. T.*

## EVALUATION & EXAM SCHEDULE

### Evaluation Summary:

| <u>Course Component</u> | <u>Date</u>  | <u>Weight</u> |
|-------------------------|--|---------------|
| <b>Midterm</b>          | Mon. Feb. 27   | 30%           |
| <b>Final Exam</b>       | TBA – April exam period                                | 50%           |
| <b>Assignments</b>      | Due throughout first and second term – see dates below | 20%           |

### Exams

**Midterm Test:** Scheduled for Monday, February 27<sup>th</sup>, in class. The Midterm Test will cover material from Chapters 11 – 14 and the corresponding lectures.

**Final Examination:** Scheduled during the Final Exam Period (April 14 – 30). The 3 hour Final Exam is based on Chapters 15 – 20, excluding chapter 19, and the corresponding lectures.

The Midterm Test and Final Exam will include questions in several different formats, including short written answers, calculation questions, definitions, and multiple choice. You *will* have to calculate statistical terms in the tests and exams. Marks will be given for selecting the correct statistical test (unless given as part of the question), steps in working out the problem, the correct statistic (i.e., the correct numerical value), and, in some cases, interpretation of the statistic. Thus, even if you arrive at an incorrect final term, marks for intermediate steps may be available. More details about test and exam format will be available as we approach the test or exam date.

All exams are closed book exams. Any necessary formula and tables will be provided with the examination. Calculators, but not laptops or cell phones, are allowed in the tests and exams.

### Assignments

Twenty percent (20%) of your mark comes from a series of assignments. There are five assignments and you need to submit four out of the five. It is your choice which four you submit. If you submit all five assignments, the best four will be counted toward your assignment mark. Because the number of steps involved in completing the assignments will vary, the marking of assignments

may vary. For example, some assignments may be marked out of 20 while others may be marked out of 25. Despite this difference, each assignment contributes the same amount to your assignment mark.

Assignments will usually involve working out a statistical problem (showing all calculations) and providing a graphic or concise written interpretation or presentation of the analysis. Assignments will be posted on the course website. Assignment due dates are listed below, listed with the class schedule, are given in the assignments handout, and will be posted on the course website.

Assignments are due by 4:00 p.m. on the due date. It is best to submit your assignments in class. If you submit an assignment after class, you should give hand it in at the Registrar's Office (room 11) so that time and date can be stamped to indicate when the assignment was submitted. If you submit an assignment after 4:00 pm that assignment will be considered submitted the following morning and a late penalty will be applied.

**Late Assignments:** There is a per day penalty for assignments submitted after 4:00 pm on the due date. The late is penalty is 20% of the assignment total per day late.

| <i>Assignment</i> | <i>Topic</i>               | <i>Due</i> |
|-------------------|----------------------------|------------|
| Assignment 1      | Estimation                 | Jan. 30    |
| Assignment 2      | ANOVA                      | Feb. 8     |
| Assignment 3      | Two Factor ANOVA           | Mar. 12    |
| Assignment 4      | Correlation and Regression | Mar. 28    |
| Assignment 5      | Chi-Square Statistic       | Apr. 4     |

Please note that grades **cannot** be adjusted on the basis of need. Your mark in the course will be the mark that you earn. Tests and exams cannot be re-written to obtain a higher mark.

For questions regarding missed tests or exams, see the academic policies section, attached, or consult the professor or an Academic Advisor.

For academic accommodation to be considered for any course component worth less than 10% of the final course grade, it is the responsibility of the student to approach the course instructor(s) in a timely fashion. Documentation may be required to be submitted to the academic advisor. If documentation is required, the request for accommodation will be decided by the academic advisor in consultation with the instructor. If documentation is not required, the instructor will make the final decision. The policies governing requests for academic accommodation for course components worth 10% or more of the course grade are outlined in the Academic Policies section included at the end of the course outline.

## GENERAL INFORMATION

Throughout the course we will be using the tables found in the back of the textbook (Appendix B). You should either bring your textbook or a photocopy of the tables to class. During regular classes (but not tests or exams), you are welcome to share your textbook or photocopied statistical tables with your classmates.

**Buy a calculator and bring it with you to all classes.** It should have squares, square roots, and some memory capacity along with the basic mathematical operations. It would be to your

advantage if your calculator has basic statistical functions such as means and sum of squares ( $\sum x^2$ ). You do not need an expensive or elaborate calculator, even quite basic models will do everything that you need.

*Do not just buy a calculator: learn how to use it!* We will **not** spend any class time on how to use your calculator; there are too many different models for this to be useful. It is up to you to become familiar with your calculator.

## BRESCIA UNIVERSITY COLLEGE ACADEMIC POLICIES AND REGULATIONS

### 1. POLICY REGARDING MAKEUP EXAMS AND EXTENSIONS OF DEADLINES

When a student requests academic accommodation (e.g., extension of a deadline, a makeup exam) for work representing 10% or more of the student's overall grade in the course, it is the responsibility of the student to provide acceptable documentation to support a medical or compassionate claim. All such requests for academic accommodation **must** be made through an Academic Advisor and include supporting documentation. Academic accommodation on medical grounds will be granted only if the documentation indicates that the onset, duration and severity of the illness are such that the student could not reasonably be expected to complete her academic responsibilities. Appropriate academic accommodation will be determined by the Dean's Office in consultation with the student's instructor(s). Please note that personal commitments (e.g., vacation flight bookings, work schedule) which conflict with a scheduled test, exam or course requirement are not grounds for academic accommodation.

If supporting documentation is from a family physician, Hospital Urgent Care Centre or Emergency Department, or a walk-in clinic a UWO Student Medical Certificate (SMC) is **required**. To download an SMC go to <https://studentservices.uwo.ca/secure/index.cfm> and follow the link under "Medical Documentation". Documentation should be obtained at the time of the initial visit. If it is not possible to have an SMC completed by the attending physician, the student must request documentation sufficient to demonstrate that her ability to meet academic responsibilities was seriously affected. Please note that under University Senate regulations documentation stating simply that the student "was seen for a medical reason" or "was ill" is **not** considered adequate to support a request for academic accommodation. All documentation is to be submitted to an Academic Advisor.

Whenever possible, requests for academic accommodation should be initiated in advance of due dates, examination dates, etc. Students must follow up with their professors and Academic Advisor in a timely manner.

The full statement of University policy regarding extensions of deadlines or makeup exams can be found at <http://www.westerncalendar.uwo.ca/2011/pg117.html>.

### 2. ACADEMIC CONCERNS

If you feel that you have a medical or personal problem that is interfering with your work, contact your instructor and Academic Advisor as soon as possible. Problems may then be documented and possible arrangements to assist you can be discussed at the time of occurrence rather than on a retroactive basis. Retroactive requests for academic accommodation on medical or compassionate grounds may not be considered.

If you think that you are too far behind to catch up or that your work load is not manageable, you should consult an Academic Advisor. If you consider reducing your workload by dropping one or more courses, this must be done by the appropriate deadlines (refer to the Registrar's website, [www.registrar.uwo.ca](http://www.registrar.uwo.ca), for official dates). You should consult with the course instructor and the Academic Advisor who can help you consider alternatives to dropping one or more courses. *Note that dropping a course may affect OSAP eligibility and/or Entrance Scholarship eligibility.*

The Dean may refuse permission to write the final examination in a course if the student has failed to maintain satisfactory academic standing throughout the year or for too frequent absence from the class or laboratory.

### 3. ABSENCES

**Short Absences:** If you miss a class due to a minor illness or other problems, check your course outline for information regarding attendance requirements and make sure you are not missing a test or assignment. Cover any readings and arrange to borrow notes from a classmate. Contact the course instructor if you have any questions.

**Extended Absences:** If you have an extended absence, you should contact the course instructor and an Academic Advisor. Your course instructor and Academic Advisor can discuss ways for you to catch up on missed work and arrange academic accommodations, if appropriate.

### 4. POLICY ON CHEATING & ACADEMIC MISCONDUCT

Students are responsible for understanding the nature of and avoiding the occurrence of plagiarism and other academic offences. Students are urged to read the section on Scholastic Offences in the Academic Calendar. Note that such offences include plagiarism, cheating on an examination, submitting false or fraudulent

assignments or credentials, impersonating a candidate, or submitting for credit in any course without the knowledge and approval of the instructor to whom it is submitted, any academic work for which credit has previously been obtained or is being sought in another course in the University or elsewhere. Students are advised to consult the section on Academic Misconduct in the Western Academic Calendar.

If you are in doubt about whether what you are doing is inappropriate or not, consult your instructor, the Student Services Centre, or the Registrar. A claim that "you didn't know it was wrong" is not accepted as an excuse.

The penalties for a student guilty of a scholastic offence (including plagiarism) include refusal of a passing grade in the assignment, refusal of a passing grade in the course, suspension from the University, and expulsion from the University.

### **Plagiarism:**

Students must write their essays and assignments in their own words. Whenever students take an idea or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence (see Scholastic Offence Policy in the Western Academic Calendar).

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.

### **Computer-marked Tests/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. Software currently in use to score computer-marked multiple-choice tests and exams performs a similarity review as part of standard exam analysis.

## **5. PROCEDURES FOR APPEALING ACADEMIC EVALUATIONS**

All appeals of a grade must be directed first to the course instructor. If the student is not satisfied with the decision of the course instructor, a written appeal signed by the student must be sent to the Department Chair. If the response of the department is considered unsatisfactory to the student, she may then submit a signed, written appeal to the Office of the Dean. Only after receiving a final decision from the Dean may a student appeal to the Senate Review Board Academic. A Guide to Appeals is available from the Ombudsperson's Office, or you can consult an Academic Advisor. Students are advised to consult the section on Academic Rights and Responsibilities in the Western Academic Calendar.

## **6. PREREQUISITES AND ANTIREQUISITES**

Unless you have either the prerequisites for a course or written special permission from your Dean to enroll in it, you will be removed from the 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.

Similarly, you will also be deleted from a class list if you have previously taken an antirequisite course unless this has the approval of the Dean. These decisions may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course because you have taken an antirequisite course.

## **7. SUPPORT SERVICES**

The Brescia University College Registrar's website, with a link to Academic Advisors, is at [http://www.brescia.uwo.ca/academics/registrar\\_services/index.html](http://www.brescia.uwo.ca/academics/registrar_services/index.html).

The University of Western Ontario Registrar's website is at <http://www.registrar.uwo.ca/index.cfm>

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Portions of this document were taken from the Academic Calendar, the Handbook of Academic and Scholarship Policy and the Academic Handbook of Senate Regulations. This document is a summary of relevant regulations and does not supersede the academic policies and regulations of the Senate of the University of Western Ontario.