

EDPE 575: EDUCATIONAL MEASUREMENT

Fall 2013 (3 credits) Wednesdays 6:05-8:55 PM

Chancellor Day Hall, Room 102

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Course Overview

This course provides an introduction to basic statistical principles as applied to educational psychology. Course topics include major concepts and methods of descriptive statistics including data structure, measures of central tendency and variability, and theoretical/sampling distributions. Concepts and procedures of inferential statistics to be addressed include correlation, regression, hypothesis testing, parameter estimation, t-tests, and ANOVAs. The emphasis in this course is not on the mathematical formulae underlying statistics, but on the appropriate use and critical interpretation of statistics with respect to research activities as well as problem solving in everyday life.

Course Objectives

Upon completion of the course, students should be able to:

1. Describe and contrast the assumptions and procedures for both descriptive and inferential statistics
2. Select and compute appropriate statistical techniques for varied behavioural research questions
3. Interpret and critically evaluate the results of statistical analyses
4. Identify critical conceptual and statistical components in published empirical research

Required Readings

- Hinkle, D. E., Wiersma, W., & Jurs, S. G. (2003). *Applied statistics for the behavioural sciences (5th Ed.)*. Boston: Houghton Mifflin. (ISBN: 9780618124053).
- Empirical readings as indicated for research assignments and brief reports.

Course Requirements

Final grades will be based on three components consisting of take-home assignments as well as in-class activities including presentations and exams. In accordance with McGill University's Charter of Students' Rights, students have the right to submit in English or in French any written work that is to be graded. Specific instructions concerning course requirements (e.g., assignments) will be provided in class. I do not review rough drafts of assignments and extra credit submissions or post-deadline assignment revisions are not permitted.

1. In-Class Exams (60%)

Two exams (30% each) will be completed on campus computers during class time (2.5 hours) in Room 328 in the Education Bldg. The exams are non-cumulative and will evaluate knowledge of main concepts covered in Chapters 1-6 (Exam 1, Oct. 16) and Chapters 7, 8, 11, 13-14 (Exam 2, Nov. 27). Sample exams are available in myCourses and exam reviews will occur in the preceding class. *Ensure you are able to successfully log in to a campus computer prior to the exam date.*

2. Research Assignments (30%)

Three research assignments (10% each) will each require students to identify critical conceptual/statistical components and summarize the findings of a published empirical study. Assignments are submitted via the myCourses system and are due on Sept. 25, Oct. 30, and Nov. 20 prior to class.

3. Media Presentation (10%)

Each student is required to give a brief in-class presentation (~ 5 mins) highlighting “statistics” of interest as reported to the public by media outlets, institutions, or governments. The presentation should show the relevant website and/or figures (e.g., graphs) and briefly discuss the descriptive data (e.g., means, proportions or percentages, standard deviations, margins of error) or inferential statistics presented (e.g., IV/DV, correlations, regression, t-tests). Sources for statistics may include articles or reports from, for example, Statistics Canada (e.g., “Education, Training, and Learning” reports on attrition, teacher salaries, education costs, etc.), Elections Canada (e.g., polling, election, participation), OECD (e.g., “Education at a Glance 2012” report on reading/math performance, university enrollment), or news coverage (e.g., informal public polls; CBC, CNN, Globe & Mail).

Assigned presentations dates are indicated by name in a schedule provided in myCourses. The presentation must be in PowerPoint format and uploaded to myCourses prior to class. A PDF version of the slideshow must also be uploaded to myCourses, accompanied by a brief outline of the presentation and a link to relevant online content.

Grading

Final grades are assigned on the standard university scale. Students are strongly encouraged to discuss any grading questions or concerns directly with the instructor. In the event of extraordinary circumstances beyond the University’s control, the course content/grading rubrics are subject to change. *NOTE: All course requirements must be completed to receive a final grade.*

<i>Requirements</i>		<i>Grade</i>	<i>Grade Points</i>	<i>Numerical Scale</i>		
Exams x 2	60%	A	4.0	85-100%		
Assignments x 3	30%	A-	3.7	80-84%		
Media Presentation	10%	B+	3.3	75-79%		
<hr/>				B	3.0	70-74%
Total:	100%	B-	2.7	65-69%		
		C+	2.3	60-64%		
		C	2.0	55-59%		
		D	1.0	50-54%		
		F	0	0-49%		

Policies

• Participation & Conduct

Students are expected to read the assigned material before class, including both the textbook chapters as well as brief report articles. Students are also expected to participate in class discussions concerning the chapters and brief reports, as per *discussion questions concerning the brief reports* available prior to class on myCourses. Students are expected to attend each class except in the case of illness, official closures, or extenuating circumstances. Students are responsible for obtaining missed class content from other students or myCourses (class slides are available after class). All electronic devices should be silenced prior to class and not be used without instructor permission (e.g., phones, PDAs, laptops, recorders, etc.). Usage privileges may be revoked for inconsiderate device use (e.g., texting, loud typing, web surfing).

- **Late Submissions**

Late assignments will be *penalized 10% per day*, with entries submitted *after the start of class* considered one day late. Explanations for late submissions involving technology problems are not acceptable. Ensure your work is backed-up and ready for submission before the deadline, and allow sufficient time prior to the deadline to confirm your assignment was uploaded and/or submit via campus computers to avoid personal computing difficulties. All excuses concerning *university technology* (e.g., email, myCourses) must be specifically confirmed by direct correspondence from McGill ICS personnel to the instructor.

- **Deadline Extensions & Changes**

Deadline extensions (e.g., exams) and presentation date changes will be considered only if a *prior notice of absence* and/or *appropriate formal documentation* regarding excusable absences is provided. Possible excusable absences include illness (e.g., with physician note, hospital record), funerals (e.g., with travel receipts, obituary), religious observances, participation in university activities, and extenuating circumstances. Revised deadlines must be within one week of the original deadline and are scheduled by the instructor. Presentation dates may be exchanged between students to accommodate scheduling difficulties.

- **Academic Integrity**

McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism, fabrication, and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see www.mcgill.ca/students/srr/honest). In this class, plagiarism is defined as *5 or more words* in a row from another source (e.g., textbook, website, article, another paper, etc.) not indicated by quotation marks and parenthetical source notations. Submissions in which plagiarism is observed will be forwarded to the Associate Dean of Graduate and Postdoctoral Studies for disciplinary action (see articles 56 and 56.1 in the [Student Rights and Responsibilities Handbook](#)). Lectures and course materials are copyright protected and require written instructor consent before reproduction for commercial use. Additional policies governing academic issues that affect students are found in the McGill Charter of Students' Rights (Handbook Chapter 1).

- **Students with Disabilities**

If you are a student with a physical or learning disability as documented by the Office for Students with Disabilities (514-398-6009), please contact me as soon as possible to make necessary arrangements. Students **MUST** have registered with the OSD and informed the instructor *at least two weeks prior to a course deadline* in the case of disability-related deadline changes.

- **Religious Observances**

It is the policy of McGill University that students not be penalized for religious observances. Students will be allowed, whenever possible, deadline extensions and presentation date changes due to such absences. It is the student's responsibility to contact the instructor 2+ weeks before the absence to make alternate arrangements.

- **Course Evaluation**

Students are strongly encouraged to fill out the online evaluation for this course at the end of term. Online course evaluations serve primarily as a tool towards teaching improvement, informing students about courses, and as one element for evaluating the teaching performance of staff for reappointment, tenure, and promotion purposes. Notifications of the availability and procedures for completing evaluations will be provided in myCourses.

- **Course Communication**

Emails will be sent to the class in the event of class cancellations or announcements and are the best way to contact the instructor (via myCourses mail or directly at nathan.c.hall@mcgill.ca). Ensure all direct email communication with the instructor is from a *McGill email addresses* (to verify identity), and allow at least 2 business days for an email reply from the instructor. The course syllabus, assignment instructions/readings, announcements, and grades will also be accessible through the myCourses system. To avoid problems with myCourses functionality, Firefox or Internet Explorer browsers are encouraged, ensure the java software on your computer is up to date, and click the "Support / System Check" link on your myCourses home page (top right) to ensure your browser is properly configured.

- **Acknowledgements**

The present syllabus is adapted from previous syllabi by Dr. Krista Muis (ECP).

Course Schedule

Date	Topic	Readings	Deadlines
Sept. 4	Introduction	Chapter 1	
Sept. 11	Organizing and Graphing Data	Chapter 2	Presentations – Round 1
Sept. 18	Measures of Central Tendency	Chapter 3 Brief Report 1	Presentations – Round 2
Sept. 25	The Normal Distribution	Chapter 4	Assignment 1 Presentations – Round 3
Oct. 2	Correlation	Chapter 5	Presentations – Round 4
Oct. 9	Simple Linear Regression Review for Exam 1	Chapter 6 Brief Report 2	Presentations – Round 5
Oct. 16	<i>Room 328, Education Bldg</i>		Exam 1 (Ch. 1-6)
Oct. 23	Probability & Sampling Distributions	Chapter 7	Presentations – Round 6
Oct. 30	Hypothesis Testing – One Sample	Chapter 8	Assignment 2 Presentations – Round 7
Nov. 6	Hypothesis Testing – Two Sample	Chapter 11 Brief Report 3	Presentations – Round 8
Nov. 13	Power and Sample Size	Chapter 13	Presentations – Round 9
Nov. 20	ANOVA Review for Exam 2	Chapter 14	Assignment 3 Presentations – Round 10
Nov. 27	<i>Room 328, Education Bldg</i>		Exam 2 (Ch. 7, 8, 11, 13-14)