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YORK UNIVERSITY
FACULTY OF HEALTH
DEPARTMENT OF PSYCHOLOGY

Course: HH/SC PSYC 2022 3.0 M – Statistical Methods II

Term: Winter 2014

Course Webpage: moodle.yorku.ca

Time and Location Lectures

Thursday 14:30 - 17:30

CLH E

Course Instructor

Heather Jenkin

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Office hours: Thursday 12:30–1:30 and by appointment

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Prerequisite: One of AK/AS/HH/SC/PSYC 2021 3.00, AK/HH/PSYC 2510 3.00, AS/ECON 2500 3.00, AS/HH/SC/KINE 2050 3.00, AK/AS/SC/MATH 2560 3.00.

Prerequisite or co-requisite: AK/AS/HH/SC/PSYC 1010 6.00 or AK/HH/PSYC 2410 6.00, GL/PSYC 2510 6.00, with a minimum grade of C when used as a prerequisite.

Course credit exclusions: AK/AS/HH/SC/PSYC 2020 6.00, AK/PSYC 3110 3.00 (prior to Summer 2002), AK/ECON 3480 3.00, AS/ECON 3500 3.00, AS/HH/SC/KINE 3150 3.00, AK/AS/SC/MATH 2570 3.00, AS/POLS 3300 6.00, AS/SOCI 3030 6.00.

Note: SC/BIOL 2060 3.00, SC/BIOL 3090 3.00, or AS/SC/MATH 2500 3.00 may not be substituted for AK/AS/SCPSYC 2022 3.00 for major or minor credit in psychology.

Course Learning Objectives

This course is designed to provide the student with the statistical skills necessary to describe and understand the data from psychological research. It is a course that builds on knowledge acquired in Statistical Methods I (the study of fundamental concepts and techniques of descriptive and inferential statistics). Topics covered will include: power, hypothesis tests using t-tests (for independent and related measures); ANOVA (for both repeated and independent measures and two factors); correlation, linear regression analysis, and non-parametric tests (such as Mann-Whitney, Wilcoxon etc.).

Organization of the Course -

The course involves formal lectures by the instructor on topics outlined below in the reading schedule. The required readings are central to the course. Class time will also include tutorial/Q&A time that will serve to enrich, clarify, and illustrate assigned topics with the completion of homework problems in class. This is important as they provide useful experience with statistical tasks. Suggested problems will be posted on moodle. It is advisable that students complete these problems and then difficulties can be discussed on the appropriate day.

Course logistics

- Lectures will begin at 14:30.
- Question and Answers will be 45 minutes and will involve problem take-up time.
- Lecture information will be on Moodle. Make sure that you sign up for a Moodle account as soon as possible. <http://moodle.yorku.ca>

Course Text / Readings

Text: Gravetter, F.J. & Wallnau, L. B. (2012) Statistics for the Behavioural Sciences. 9th Ed. Belmont CA: Thomson/Wadsworth

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Additional readings: Supplemental package required "Chapter 20" (see York Bookstore)

Evaluation

The final grade for the course will be based on the following items weighted as indicated:*

Midterm	30%	non-cumulative in class Feb 12th
Final Examination:	50%	cumulative scheduled in the exam period (April 8-24)

The midterm will cover material from lectures and readings preceding the test date. The final examination will be **cumulative**, covering all course material.

Two assignments will be completed before each Term Test.

Assignment 1	10%	due 15:00 in class Jan 29th
Assignment 2	10%	due 15:00 in class March 19th

ADDITIONAL TEST INFORMATION

• For tests you **must** bring York sessional and photo ID, writing tools, and a **basic non-programmable** calculator (+, -, x, ÷, and $\sqrt{\quad}$ only). Any calculator more sophisticated will be **confiscated** until the test is over. Your cell phone may NOT be used as a calculator.

• A one-sided *handwritten* "cheat sheet" NO larger than 3 inches by 5 inches may be brought to the midterm. **Typed notes will be confiscated. Notes larger than 3 inches by 5 inches will be confiscated.**

• A two-sided *handwritten* "cheat sheet" NO larger than 3 inches by 5 inches may be brought into the final. **Typed notes will be confiscated. Notes larger than 3 inches by 5 inches will be confiscated.** (You may use a **one sided** handwritten cheat sheet that is **6 inches by 5 inches** if you prefer)

• Statistical tables will be provided as needed.

Missed Assignments: The percentage weighting of any late or missed assignment will be added to the subsequent term test (for example if you miss Assignment 1 then the midterm will be re-weighted as 40%)

Missed Tests: Students must contact the instructor within 24 hours of a missed test. Students with a documented reason for missing a course test, such as illness, compassionate grounds, etc., which is confirmed by supporting documentation may request accommodation from the Course Instructor. The only Medical documentation accepted will be a Attending Physician's Statement, www.yorku.ca/grads/forms/.../attending_physician_statement.pdf
Accommodations **may be** permission to write a make-up test, but **could also** involve a re-weighting of course evaluations. Further extensions or accommodation will require students to submit a formal petition to the Faculty.

IMPORTANT COURSE INFORMATION FOR STUDENTS

All students are expected to familiarize themselves with the following information, available on the Senate Committee on Curriculum & Academic Standards webpage (see Reports, Initiatives, Documents) - http://www.yorku.ca/secretariat/senate_cte_main_pages/ccas.htm

Academic Honesty and Integrity

York students are required to maintain the highest standards of academic honesty and they are subject to the Senate Policy on Academic Honesty (<http://www.yorku.ca/secretariat/policies/document.php?document=69>). The Policy affirms the responsibility of faculty members to foster acceptable standards of academic conduct and of the student to abide by such standards.

Access/Disability

York University is committed to principles of respect, inclusion and equality of all persons with disabilities across campus. The University provides services for students with disabilities (including physical,

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medical, learning and psychiatric disabilities) needing accommodation related to teaching and evaluation methods/materials. These services are made available to students in all Faculties and programs at York University.

Students in need of these services are asked to register with disability services as early as possible to ensure that appropriate academic accommodation can be provided with advance notice. You are encouraged to schedule a time early in the term to meet with each professor to discuss your accommodation needs. Please note that registering with disabilities services and discussing your needs with your professors is necessary to avoid any impediment to receiving the necessary academic accommodations to meet your needs.

Additional information is available at the following websites:

Counselling & Disability Services – <http://www.yorku.ca/disabilityservices>

Counselling & Disability Services at Glendon - <http://www.glendon.yorku.ca/counselling>

York Accessibility Hub - <http://www.yorku.ca/accessibilityhub/index.htm>

Ethics Review Process

York students are subject to the York University *Policy for the Ethics Review Process for Research Involving Human Participants*. In particular, students proposing to undertake research involving human participants (e.g., interviewing the director of a company or government agency, having students complete a questionnaire, etc.) are required to submit an *Application for Ethical Approval of Research Involving Human Participants* at least one month before you plan to begin the research. If you are in doubt as to whether this requirement applies to you, contact your Course Director immediately.

Religious Observance Accommodation

York University is committed to respecting the religious beliefs and practices of all members of the community, and making accommodations for observances of special significance to adherents. Should any of the dates specified in this syllabus for an in-class test or examination pose such a conflict for you, contact the Course Director within the first three weeks of class. Similarly, should an assignment to be completed in a lab, practicum placement, workshop, etc., scheduled later in the term pose such a conflict, contact the Course director immediately. Please note that to arrange an alternative date or time for an examination scheduled in the formal examination periods (December and April/May), students must complete an Examination Accommodation Form, which can be obtained from Student Client Services, Student Services Centre or online at http://www.registrar.yorku.ca/pdf/exam_accommodation.pdf(PDF)

Student Conduct in Academic Situations

Students and instructors are expected to maintain a professional relationship characterized by courtesy and mutual respect. Moreover, it is the responsibility of the instructor to maintain an appropriate academic atmosphere in the classroom and other academic settings, and the responsibility of the student to cooperate in that endeavour. Further, the instructor is the best person to decide, in the first instance, whether such an atmosphere is present in the class. The policy and procedures governing disruptive and/or harassing behaviour by students in academic situations is available at - <http://www.yorku.ca/secretariat/policies/document.php?document=82>

There is also an academic integrity website with comprehensive information about academic honesty and how to find resources at York to help improve students' research and writing skills, and cope with University life. Students are expected to review the materials on the Academic Integrity website at - <http://www.yorku.ca/academicintegrity>

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Date	Topic	Readings
Jan 8	Review of Basic Mathematics; hypothesis testing, effect size and power	8.3 - 8.6 Appendix A
Jan 15	Review of t tests	9; 10 and 11
Jan 19	Last date to add a course without permission	
Jan 22	F-max; Non- parametric tests Wilcoxon and Mann-Whitney	10.4; Appendix E, Supplement 20
Jan 29	Introduction to ANOVA Assignment 1 due at the beginning of class (before 3 pm)	12.1- 12.4 10%
Jan 30	Last date to add a course with permission	
Feb 5	ANOVA effect size and Post Hoc tests	12.5 - 12.7
Feb 12	Midterm	30%
Feb 19	Reading week - no class	
Feb 26	Repeated measures ANOVA	13
Mar 5	Two factor ANOVA	14
Mar 6	Last date to drop without receiving a grade	
Mar 12	More Ordinal data hypothesis tests: Kruskal- Wallis and Friedman	Appendix E Supplemental Ch 20
Mar 19	Hypothesis tests with correlation Problem Set 2 is dues at the beginning of class (before 3 pm)	15 10%
Mar 26	Linear regression equations and Analysis of Regression	16.1 - 16.2
April 2	Choosing the right statistics	19
<i>April 8-24</i>	<i>Final scheduled in the Winter exam period</i>	50%