

PSYCHOLOGY 3031 3.0 M: INTERMEDIATE STATISTICS LABORATORY
YORK UNIVERSITY – DEPARTMENT OF PSYCHOLOGY
WINTER 2016 – TUESDAYS 14:30 – 17:30
ACCOLADE WEST 203

Course Director

Alyssa Counsell
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Office Hour: Monday 1:30 to 2:30 pm

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Marina Rain
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Secretary

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*****Please send emails from a York email account and use PSYC 3031 in the subject line*****

Course Description: This course is designed to provide students with a practical understanding of the statistical methods and analyses used by researchers in the behavioral sciences. This includes familiarity with appropriate uses and interpretations of statistical results through discussions in class as well as through applied assignments and examples. Specifically, students will learn how to go through all of the steps to answer a research question from preparing the data for analysis, checking statistical assumptions, analyzing the data, and reporting the results. By the end of the course students will have both a theoretical understanding of statistical concepts as well as the tools to conduct statistics using software.

Course pre- or co-requisite: HH/AK/AS/SC PSYC 1010 6.0 (with a minimum of C) or AK/PSYC 2410 6.0 (with a minimum of C) and HH/AK/AS/SC PSYC 2020 6.0 or substitute

Course Format: This course will include one meeting of 3 hours per week on Tuesdays. Each class will consist of approximately 2 hours of lecture and 1 hour of a lab component. The lectures will combine discussions on the readings and conceptual material accompanied by concrete examples. The lab component will provide students with practical, hands-on experience conducting statistical analyses using statistical software. The capacity to use statistical software to analyze data and to interpret output is a critical skill to be acquired in this course.

Software: Course material will be taught using the open source software, R. It can be obtained for free from <https://www.r-project.org/>. We will be using RStudio, a GUI for R, which can be downloaded and installed from <http://www.rstudio.com/products/rstudio>. Both R and RStudio are available for all operating systems (i.e., Windows, OS X, and Linux).

***** I highly recommend that you bring a laptop to class with R and RStudio installed *****

Course Textbooks: Reinhart, A. (2015). *Statistics Done Wrong: The Woefully Complete Guide*. No Starch Press.

Navarro, D. (2014). *Learning Statistics with R*. Retrieved from <http://health.adelaide.edu.au/psychology/ccs/teaching/lsr/>

Evaluation: 20% Midterm Exam
60% Assignments
20% Final Exam

Exams: There will be two exams in this course, a midterm and final. These will be comprised of multiple choice and short answer questions. The questions will be a mix of conceptual, theoretical, and practical material covered in class.

Assignments: There will be two assignments in this course. Each is worth 30% of your final grade. The assignments will ask you to analyze data and write up a short report on the findings. You will also be asked to submit your syntax and output for verification of what you've done. The assignments will be provided three weeks in advance of the due date and specific details about page limits and material will be discussed in class once the assignment has been posted. Assignments must be submitted via email to both the instructor and TA by 11:59pm on the day they are due.

Grading: The final grading scheme for the course conforms to the 9-point system used in undergraduate programs at York University (e.g., A+ = 9, A = 8, B+ = 7, C+ = 5, etc.). Assignments and tests will bear either a letter grade designation or a corresponding number grade (e.g., 80%).

POLICY ON MISSED EXAMS AND ASSIGNMENTS

1. Students are expected to write each test on the dates specified. Assignments must be submitted by 11:59pm on the day they are due. **Late assignments will not be accepted. If you miss a test or fail to submit an assignment for no documented reason(s), you will receive a grade of zero.**
2. If you have a legitimate reason (e.g., death in the family, severe illness, etc.) for being excused from an exam or assignment, you must have documentation to verify your absence. In the event of a missed exam, you will have one chance to take a make-up exam. **Please note that we are extremely strict about the conditions that will allow you to write a make-up examination (missing an exam for a vacation is not an acceptable reason!) or hand in a late assignment.**
3. **Within 48 hours of the missed exam or assignment, students must contact the course instructor and the TA via email, and documentation must be provided within one week.** In this email, please (a) outline the reason for your absence, and (b) confirm that you have medical or other relevant documentation to support this reason. Be sure to note the course number, your full name and student number in the subject of your email.

4. **Please note that there will be one set date for the make-up test/exam.** For the first exam, students who are unable to attend at the make-up time due to further or continued documented illness or significant personal hardship may be excused from the test, and their final course grade will be pro-rated to reflect this. For the final examination, relevant university policies will be followed.

5. If you miss a test, regardless of your reason, you have waived the right to have a specific percentage of graded feedback available to you prior to the drop date.

6. Once you have contacted the course instructor and your TA, you will need to submit an attending physician's statement or other proper documentation (<http://www.registrar.yorku.ca/exams/deferred/>). This should be brought to your instructor's mailbox or faxed to (416) 736-5814, addressed to Alyssa Counsell. It is your responsibility to find out when the make-up exam is from your TA or instructor!

7. Note that deferred final exams are held on a single common date determined by the Department of Psychology. No individualized testing is available unless arranged formally through one of the offices at the University (e.g., Counseling and Disability Services).

Academic Integrity: All students are expected to abide by the university's policies on academic integrity. Please review the policies at the links below:

<http://www.yorku.ca/academicintegrity/students/index.htm>

<http://www.yorku.ca/univsec/policies/document.php?document=69>

Although not limited to the following, any student found (1) looking at another student's examination; (2) communicating with another student during the examination; (3) in possession of unauthorized documents (e.g., notes) in the examination; (4) receiving unauthorized communications from outside the examination room or; (5) using an electronic device such as a cell phone will be considered to be in violation of one or more of the university's academic integrity policies and appropriate disciplinary steps will be taken.

Disability Accommodation: Appropriate accommodation will be made in accordance with the policies of the university <http://www.yorku.ca/secretariat/policies/document.php?document=68>). Students should consult with the university's accommodations office for relevant documentation.

Religious Accommodation: Appropriate accommodation will be made in accordance with the policies of the university. Please see the instructor at your earliest opportunity if you discover issues relating to your religious practices and the expectations of the course.

Other Important Information:

Code of Student Rights and Responsibilities

<http://www.yorku.ca/secretariat/policies/document.php?document=202>

York University Secretariat:

<http://www.yorku.ca/secretariat/index.html>

Tentative Course Schedule and Important Dates:

Please note that the syllabus is tentative. Any changes to material will be announced in class. Students are responsible for being aware of any changes made.

*****Last date to drop the course without receiving a final grade is March 4th, 2016 *****

| Date | Lecture Material | Readings |
|-------------|---|--------------------------------------|
| January 5 | Course Introduction and Stats II Review | Ch 1 in SDW Ch 1, 10, & 11 in LSR |
| January 12 | Introduction to R and RStudio | Ch 2 in SDW Ch 3 & 4 in LSR |
| January 19 | Descriptive Statistics and Graphical Techniques | Ch 3 in SDW Ch 5 & 6 in LSR |
| January 26 | Comparing two means (t-tests) | Ch 4 in SDW Ch 13 in LSR |
| February 2 | *** MIDTERM *** | |
| February 9 | One way ANOVA and posthoc tests | Ch 5 & 6 in SDW Ch 14 in LSR |
| February 16 | READING WEEK (No class) | |
| February 23 | Factorial ANOVA ***Assignment 1 Due *** | Ch 7 in SDW Ch 16 in LSR |
| March 1 | Repeated Measures Designs | Ch 9 in SDW |
| March 8 | Correlation and Simple Regression | Ch 8 in SDW Ch 15 in LSR |
| March 15 | Multiple Regression | Ch 11 in SDW |
| March 22 | Categorical Data Analysis ***Assignment 2 Due *** | Ch 12 in SDW Ch 12 in LSR |
| March 29 | *** FINAL EXAM *** | |

SDW - Statistics Done Wrong
LSR - Learning Statistics with R