

PSYCHOLOGY 3031 3.0 A: INTERMEDIATE STATISTICS LABORATORY
YORK UNIVERSITY – FACULTY OF HEALTH
FALL 2013 – FRIDAYS 8:30 – 11:30

Course Director: Carrie Smith
smithce@yorku.ca
www.carriesmith.ca/PSY3031
BSB 072F

Teaching Assistant: Matthew Sigal
msigal@yorku.ca
www.matthewsigal.com
BSB 262 (by appt. only)

Office Hours: TBA

Course Description: Intermediate Statistics Laboratory is an applied course in which students will learn to conduct and interpret statistical analyses commonly employed in psychological research. In this course we will use the *R* statistical computing programming language (www.R-project.org).

The principal goal of the course is for students to become familiar with statistical software, learn to conduct statistical analyses and interpret the results appropriately. These are essential skills for research in Psychology. By the end of the course, students should be able to:

- Handle, screen, and clean data sets
- Summarize (graphically and numerically) and observe patterns in statistical data
- Conduct a range of statistical techniques commonly used in psychological research (e.g. t-test, ANOVA, regression, correlation, repeated measures, non-parametric methods) and interpret the results
- Write reports summarizing statistical analyses conducted

This course assumes students have taken an introduction to statistics course and are familiar with basic statistical tests (e.g. t-tests, ANOVA, simple regression, correlation). Essential formulas will be reviewed briefly in the course of lecture, but students are encouraged to review their introductory statistics materials.

Course Format:

Each meeting will begin with a lecture and software demonstration introducing and reviewing key statistical concepts and how they are applied using *R*. The second portion of the meeting will consist of a hands-on laboratory where you will work individually on problems that require application of these concepts to realistic datasets.

Course prerequisite or co-requisite: PSYC 1010 6.00 or AK/PSYC 2410 6.00, with a minimum grade of C, and PSYC 2020 6.00 or substitute.

Course Credit Exclusion: KINE 3150 3.00.

Required Text: Field, A. P., Miles, J., & Field, Z. C. (2012). *Discovering statistics using R*. Sage Publications.

Evaluation:	30%	Mid-term
	40%	Final Exam
	10%	Participation
	20%	Assignments (4x)

Midterm and Final Exam: Both exams will take place in the computer lab. Exams will involve some short answer and multiple-choice questions, but the primary focus will be conducting statistical analyses of supplied data and providing thoughtful interpretations of the results.

Assignments: Four assignments will be provided with accompanying data sets. You may discuss the assignments with fellow students but must write ups should be completed individually. Any evidence of copying will be considered a breach of academic honesty and will be dealt with accordingly (see www.cse.yorku.ca/admin/coscOnAcadHonesty.html for more information).

Assignments are to be submitted via email to both the course director and TA before 11:59pm the day they are due. Late assignments will **not** be accepted (see the “Policy on Missed Assignments” section below).

Participation: This course provides training in the application of statistical methods through software demonstration and hands-on laboratory sessions. Students are expected to attend the lab sessions, ask questions, assist one another during exercise time and participate in class by asking thoughtful questions.

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.

Tentative Schedule and Important Dates:

September	13 th	Course Introduction, Introduction to R syntax and RStudio
	20 th	Exploring data and assumptions (Chapters 4 & 5), R Markdown
	27 st	Correlation (Chapter 6) ASSIGNMENT 1 (5%)
October	4 th	Regression (Chapter 7)
	11 th	t-tests (Chapter 9)
	18 th	Analysis of Variance (ANOVA) (Chapter 10 & 12) ASSIGNMENT 2 (5%)
	25 th	MIDTERM (35%)
November	1 ST	CO-CURRICULAR WEEK – NO CLASS
	8 th	Analysis of Covariance (Chapter 11) DROP DATE FOR COURSE
	15 th	Repeated Measures Designs (Chapter 13) ASSIGNMENT 3 (5%)
	22 th	Categorical Data (Chapter 18) and Non-Parametric Tests (Chapter 15)
	29 th	Regression Redux
December	6 st	Review ASSIGNMENT 4 (5%)
	10 th -23 rd	FINAL EXAM (40%) – DATE TO BE ANNOUNCED

Supplementary Texts (NOT necessary for the course but good resources):

Fox, J., & Weisberg, H. S. (2010). *An R Companion to Applied Regression* (2nd Ed.). Sage Publications.

Howell, D. C. (2012). *Statistical Methods for Psychology* (8th Ed.). Wadsworth Publishing.

Field, A. P. (2009). *Discovering statistics using SPSS* (3rd Ed.). Sage Publications.

Ramsay, F., & Schafer, D. (2012). *The Statistical Sleuth* (3rd Ed.). Thomson Brooks/Cole Publications.

POLICY ON MISSED EXAMS

1. Students are expected to write each test on the dates specified. **If you miss a test 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 a test/exam, and have documentation to verify your absence, you may take a make-up test/exam in lieu of the missed test/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!).
3. **Within 48 hours of the missed exam, students must contact the course instructor and the TAs 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 your course section and your full name and student number in the subject of your email.
4. 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. 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).
7. Once you have contacted the course instructor and your TA, you will need to submit an attending physician's statement (<http://www.registrar.yorku.ca/exams/deferred/>). This should be brought to your TA's mailbox or faxed to (416) 736-5814, addressed to Carrie Smith. **It is your responsibility to find out when the make up exam is from your TA!**

POLICY ON MISSED ASSIGNMENTS

1. Students are expected to submit each test prior to 11:59pm on the day they are due. **Late assignments will not be accepted. If you miss 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 assignment, and have documentation, the final grade for assignments (20%) will be based upon submitted work.
3. **Within 48 hours of the missed 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 your course section and your full name and student number in the subject of your email.

4. Once you have contacted the course instructor and your TA, you will need to submit an attending physician's statement (<http://www.registrar.yorku.ca/exams/deferred/>). This should be brought to your TA's mailbox or faxed to (416) 736-5814, addressed to Carrie Smith.

Academic Integrity: All students are expected to abide by the university's policies on academic integrity. The relevant documents can be found here: <http://www.yorku.ca/academicintegrity/students/index.htm>. Although not limited to the following four, 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, or (4) receiving unauthorized communications from outside the examination room 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 Home:

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

Policy on Accommodation for students with Disabilities:

<http://www.yorku.ca/secretariat/policies/document.php?document=68>

Policy on plagiarism and academic honesty:

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

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