Psyc 202 Queen's University – Statistics in Psychology

Fall 2012

Instructor:	Ronald R. Holden	**Office Hours:**	Wednesday 13:00 – 14:00
Phone:	613-533-2879	**Office Location:**	Humphrey Hall 352
Email:	holdenr@queensu.ca		

Lecture Room: Dunning Auditorium	**Lecture Day & Time:**	Monday	16:00 – 17:30
		Wednesday	14:30 – 16:00
Lab Room: Humphrey Hall 219	**Lab Day & Time:**	Monday	08:30 – 10:00 (Section 006)
			18:30 – 20:00 (Section 002)
			20:00 – 21:30 (Section 003)
		Tuesday	10:00 – 11:30 (Section 011)
			14:30 – 16:00 (Section 007)
			16:00 – 17:30 (Section 008)
			18:30 – 20:00 (Section 004)
			20:00 – 21:30 (Section 005)
		Wednesday	10:00 – 11:30 (Section 009)
			11:30 – 13:00 (Section 010)

COURSE DESCRIPTION:
This course provides a basic introduction to data management and analysis - from the formulation of interesting research questions, through the design of experiments and statistical analysis, to final publication of results in papers and seminars. Emphasis is on the use of computers to facilitate this process, on the practical application of statistical methods, and on developing analytic and critical thinking.

LEARNING GOALS:
This course will introduce you to the basic concepts of statistics. The focus will be on understanding how statistics work and how to use its tools appropriately. The course will give you the necessary background to appropriately collect and correctly analyze your own data, and also to understand and critically evaluate published results. In addition, the aim is to provide you with the basic knowledge to deal with more advanced concepts in future courses or applications. Finally, the course will introduce you to statistical software that will be useful for the rest of your academic career.

LEARNING OBJECTIVES:
This course has four main objectives. First, it will explain the foundations of statistical methodology. Even though we will encounter mathematical formulae, the aim is to relate the mechanics behind statistical tools rather than mathematical theory. Second, we will use this foundation to determine how best to collect data

and, once that step is accomplished, we will determine which statistical tools are most effective and suitable for the analysis of your data (you don't want to grab a hammer if you've got a screw). Third, you will learn how to interpret and critically discuss statistical results presented in papers and presentations. Finally, the course will introduce you to statistical software. This will give you a solid grounding for future use of that software, and it will give you a head-start for learning other software packages in the future.

TEACHING ASSISTANTS

Name and Email: Justin Deonarine   11jd34@queensu.ca
                Katherine Holshausen   9kh34@queensu.ca
                Amy O'Neill   9ao19@queensu.ca
                Brock Criger   8bc29@queensu.ca
                Madeleine D'Agata   11amd8@queensu.ca
                Amanda Timmers   6at9@queensu.ca

COURSE REQUIREMENTS

Required Textbooks:
1. Gravetter, F. J., & Wallnau, L. B. (2013). *Statistics for the behavioral sciences* (9th ed.). Belmont, CA: Wadsworth.
2. Kirkpatrick, L. A., & Feeney, B. C. (2013). *A simple guide to SPSS for version 20.0.* Belmont, CA: Wadsworth.

Additional Textbooks: There are a host of other books available. If interested in books that offer more detail and more topics, talk to me.

Technological Requirements:

Make sure you are familiar and comfortable with Moodle.

Calculators acceptable for use during quizzes, tests and examinations are intended to support the basic calculating functions required by most Arts and Science courses. For this purpose, the use of the **Casio 991** series calculator is permitted and is the **only approved calculator for Arts and Science students**. This inexpensive calculator sells for around $25 at the Queen's Campus Bookstore, Staples and other popular suppliers of school and office supplies (http://www.queensu.ca/artsci/help/topics/calculator-policy).

You will need to use SPSS (statistical software package) to complete your assignments. This package is available on all of the computers in the lab, and you will have time during lab sessions to work on your assignments. SPSS may (or may not) also be available on computers in the Stauffer Library Queen's Learning Commons (QLC). Before relying on doing assignments at the QLC, please verify access hours and that the computer you will be using has SPSS available.

      To access SPSS v.18 at the QLC:
      - log in to a computer using your netid and password
      - open desktop folder "Microsoft Office & Other Programs"
      - open subfolder "Statistical Analysis Software"
      - open PASW Statistics 18

- * Remember to save work frequently to USB or network drive
- * Remember to log off before leaving the computer all of the campus libraries.

Alternatively, a student version of SPSS is available for purchase at the campus computer store, if you prefer to have the program available on your home computer. You are NOT required to purchase SPSS for the purpose of this course.

ORGANIZATION OF THE COURSE

This course consists of lectures and labs. Labs, in which we introduce you to SPSS and work on some concepts in more detail, begin in **Week 2**. Labs build on the materials covered in the previous lectures and on assigned reading in the text book. The more you follow lectures and work through the text book, the more you will get out of these labs.

There will be two types of labs. 'Teaching labs', held in weeks 2, 4, 6, 7, 9 and 11, will deal with SPSS and statistical concepts, and attendance during these labs is **required**. 'Help labs,' weeks 3, 8, 10, and 12 are on a drop-by, come-as-needed basis. Consider them as your help-desk for this course, and an opportunity to work on your assignments. If you are not clear about lecture topics, anything we did in tutorials, things in the book, or anything else, don't wait: come to your next lab period and let us help you.

If you are not sure what type of lab is scheduled for a certain week, check the Course Schedule below. If it is a 'teaching lab', you must attend. If it is a 'help lab', you can get your questions answered and stats problems solved. Remember: both types of labs are scheduled at the same time during different weeks.

COURSE POLICIES

Attendance: You are expected to attend all lectures and 'teaching labs'. The 'help lab' sessions are voluntary, but you are strongly encouraged to make use of them. It is often much easier to explain things in person rather than through email. In addition, you can get exactly the help you need, without having to spend lots of time emailing back and forth just to clear up a misunderstanding.

Assignments & Exams: It is your responsibility to notify the instructor **in advance** if for some reason you are unable to write an exam or hand in an assignment on time. **You must provide signed documentation** of the reason that you are unable to write the exam or hand in the assignment.

Special Accommodations: It is your responsibility to notify the instructor **as early as possible** if you require any accommodations during exam writing.

Academic Integrity:

Academic integrity is constituted by the five core fundamental values of honesty, trust, fairness, respect and responsibility (see www.academicintegrity.org). These values are central to the building, nurturing and sustaining of an academic community in which all members of the community will thrive. Adherence to the values expressed through academic integrity forms a foundation for the "freedom of inquiry and exchange of ideas" essential to the intellectual life of the University (see the Senate Report on Principles and Priorities http://www.queensu.ca/secretariat/policies/senateandtrustees/principlespriorities.html).

Students are responsible for familiarizing themselves with the regulations concerning academic integrity and for ensuring that their assignments conform to the principles of academic integrity. Information on

academic integrity is available in the Arts and Science Calendar (see Academic Regulation 1 http://www.queensu.ca/artsci/academic-calendars/2011-2012-calendar/academic-regulations/regulation-1), on the Arts and Science website (see http://www.queensu.ca/artsci/academics/undergraduate/academic-integrity), and from the instructor of this course. Departures from academic integrity include plagiarism, use of unauthorized materials, facilitation, forgery and falsification, and are antithetical to the development of an academic community at Queen's. Given the seriousness of these matters, actions which contravene the regulation on academic integrity carry sanctions that can range from a warning or the loss of grades on an assignment to the failure of a course to a requirement to withdraw from the university.

Teaching Labs: They start in **week 2**. Following week 2, teaching labs are scheduled in weeks 4, 6, 7, 9 and 11. **Attendance of these labs is compulsory.** The main objective is to get hands-on experience with some of the concepts covered in the course and with SPSS. Thus, the teaching labs are crucial in gaining the knowledge you need to complete assignments and projects. In addition, we will repeat and/or deepen some points from lectures and textbook.

Help Labs: Help labs are scheduled starting in week 3, and then in weeks 8, 10 and 12. Even though they are not compulsory, please attend the lab period you are scheduled for, if you need help. This simply ensures that you won't have to wait in a long line-up to get the help you require. It will also allow us to spend more time with each of your questions. The main focus of these labs is to help you with the completion of the assignments. However, if you have trouble understanding a concept from the lecture or textbook, this period is also an excellent time to get your questions answered and problems solved. A TA will be in the lab room for as long as needed, so arrive in time for the beginning of your session. If nobody has shown up 15 minutes after the beginning of the session, the TA will leave.

STUDENT EVALUATION

Late Assignments: All assignments are due at the **beginning of the Monday lecture** in the week that they are due (see below for due dates). Submission of assignments is done by handing in paper copies (at the beginning of class) **AND** by submitting them by email to psyc202@queensu.ca This email address is for assignment submission, only. When mailing to this address, please list, in order, the last name of your teaching assistant, your lab section, your last name, and your Assignment number. For example, if your name is Jane Doe and your lab section is Section 002 (that has Brock Criger as a Teaching Assistant) and you are submitting Assignment 2, then the subject line of your email submission should be:

Criger Section 002 Doe Assignment 2

Both hand-in and email submissions are required and must be identical. In general, there are no extensions. However, if you have an important reason why you may not be able to hand an assignment in on time, and inform the TA or the course instructor of this reason **in advance** of the deadline, we may be able to mark it as handed in on time. **Late assignments will be penalized 10% per day.**

Handing in Late Assignments: If you are handing an assignment in late, you MUST submit a paper copy of the assignment to the Psyc 202 drop box located on the third floor of Humphrey Hall, directly above the computer lab. You must also email the administrative T.A., Justin Deonarine (11jd34@queensu.ca), at the time you submit the assignment so that he will know to pick the assignment up, and you must submit your assignment by email to psyc202@queensu.ca

Missed Exams: If you know that you will not be able to write an exam, you must inform the course instructor **in advance.** Otherwise, all missed exams will **RECEIVE A GRADE OF ZERO.**

Evaluation: 6 Assignments – 2.5% each = 15%
Midterm = 40%
Final Exam = 45%

All components of this course will receive numerical percentage marks. The final grade you receive for the course will be derived by converting your numerical course average to a letter grade according to Queen's Official Grade Conversion Scale:

Queen's Official Grade Conversion Scale

Grade	Numerical Course Average (Range)
A+	90-100
A	85-89
A-	80-84
B+	77-79
B	73-76
B-	70-72
C+	67-69
C	63-66
C-	60-62
D+	57-59
D	53-56
D-	50-52
F	49 and below

COURSE ASSIGNMENTS

Assignments are short write-ups or a set of problems that deal with topics we discuss in lectures and tutorials during the previous weeks. Each assignment is worth 2.5% of your final mark. Assignments can be downloaded from the course Moodle website on Fridays after 00:01 in weeks 1, 3, 5, 7, and 9. They are due **at the beginning of class** on the second Monday after they are released. For example, Assignment 1 will be released on Friday September 14, and will be due on Monday September 24. There are two **EXCEPTIONS** to this schedule. Assignment 2 will be due on Wednesday October 10. Assignment 6 will be posted early to ensure that you have sufficient time to complete it prior to the end of scheduled classes. Assignment 6 will be posted on Monday November 19 after 19:00 and it is due at the beginning of class on Wednesday November 28.

This assignment schedule accomplishes several things: First, you will have enough time (11 days including two weekends) to complete the assignments. Second, assignments are generally released before weeks featuring help labs, thus giving you time to begin working on the assignments and then, if required, get help during help labs. Finally, assignments will deal with material that was covered in lectures and labs immediately preceding release of the assignments. For instance, Assignment 1 will deal with material from Lectures 1 to 3, and Lab 1, as well as the assigned reading.

EXAMS

MIDTERM	October 24 **(Note: 14:30 – 16:30; Place is to be Announced)**	40%	Multiple choice and short answer
FINAL	TBA – scheduled during exam period	45%	Multiple choice and short answer

COURSE SCHEDULE

Here is a schedule with lecture and tutorial topics. Please be advised that this is a work-in-progress. Lecture topics may change or be rescheduled, depending on our progress and interest.

To prepare for lectures, read the assigned readings in the textbook. At the very least, skim through the appropriate chapters so you have a good idea what I will be talking about.

Lecture notes will be available as pdf files. You can download them from the Moodle course page. **Lecture notes are not intended as a replacement for attending the lecture.** In fact, most likely you will not be able to make sense of the lecture notes without having attended the lectures.

*Weeks where the LAB column is labelled with a **T** indicate teaching labs. Weeks where the LAB column is labelled with an **H** indicate help labs.

	TOPIC	READINGS	LAB*	ASSIGNMENTS
Week 1:				
Sept. 10	Lect. 1 – Intro to Stats; Variables & Measurement	Ch. 1		
Sept. 12	Lect. 2 – Frequency Distributions	Ch. 2		Assign. 1 available on Friday
Week 2:			T	
Sept. 17	Lect. 3 – Central Tendency	Ch. 3		
Sept. 19	Lect. 4 – Variability	Ch. 4		
Week 3:			H	
Sept. 24	Lect. 5 – z-scores	Ch. 5		**Assign. 1 DUE**
Sept. 26	Lect. 6 – Probability	Ch. 6		Assign. 2 available on Friday
Week 4:			T	
Oct. 1	Lect. 7 – Probability & Samples	Ch. 7		
Oct. 3	Lect. 8 – Intro to Hypothesis Testing	Ch. 8		
Week 5:	**(No Labs due to Thanksgiving)**			
Oct. 8	**CLASS CANCELLED**	Ch. 8		**Assign. 2 DUE ON WEDNESDAY**
Oct. 10	Lect. 9 – Intro to t-statistic	Ch. 9		Assign. 3 available on Friday
Week 6:			T	
Oct. 15	Lect. 10 – Independent Samples t-test	Ch. 10		
Oct. 17	Lect. 11 – Paired Samples t-test	Ch. 11		
Week 7:			T	
Oct. 22	Mid-term exam review			**Assign. 3 DUE**

Oct. 24   **MIDTERM EXAM (Note: 14:30 – 16:30; Place to be Announced;**
           Lecture Cancelled)   Assign. 4 available on Friday

Week 8: _____ **H**
  Oct. 29   Lect. 12 – Intro to ANOVA   Ch. 12
  Oct. 31   Lect. 13 – Repeated Measures ANOVA   Ch. 13

Week 9: _____ **T**
  Nov. 5   Lect. 14 – Rep. Meas. ANOVA cont'd   **Assign. 4 DUE**
  Nov. 7   Lect. 15 – Correlation   Ch. 15   Assign. 5 available on Friday

Week 10: _____ **H**
  Nov. 12   Lect. 16 – Regression   Ch. 16
  Nov. 14   Lect. 17 – Chi-Square   Ch. 17

Week 11: _____ **T**
  Nov. 19   Lect. 18 – Binomial Test   Ch. 18   **Assign. 5 DUE**/Assign. 6 available
  Nov. 21   Lect. 19 – Choosing the Right Statistics   Ch. 19

Week 12: _____ **H**
  Nov. 26   Ordinal Data Tests   Appendix E
  Nov. 28   Final Exam Review   -**Assign. 6 DUE**

<div align="center">PSYC Departmental Policies</div>

Missed Exams

Students who cannot write an exam during the December or April exam period due to a serious, extenuating circumstance (illness, death in the family) must follow the steps below to be eligible, and be available to write a deferred exam during the PSYC department's *Make up Exam period* January 11/12th, April 29th, or September 13/14, 2013.

1. Obtain permission from their instructor to write a deferred exam. This requires notifying your instructor in advance or, under extraordinary circumstances, within 72 hours after, the exam, with appropriate documentation[i]. Please use the *Request for an Exam Deferral* form found on our website or from the UG office and attach your documentation.
2. Complete and return the instructor-signed *Permission for an Incomplete Grade* form available on the Arts and Science website and return it to the UG office.
3. Be available to write the makeup exam during the first available PSYC *Make up Exam period* January 11/12th, April 29th, or September 13/14, 2013.

NOTE: Students who do not write the makeup exam are advised to drop the course. If a student cannot write the makeup exam due to a serious extenuating circumstance for which they can provide new documentation, they will either be granted a second deferral by their instructor or be supported in their appeal to drop the course after the deadline though this decision rests with the Associate Dean (Studies).

Accommodation after the fact

Once a student has written an exam or submitted an assignment, they may not subsequently be granted accommodation such as being offered a second opportunity to write the exam or assignment or have it count for less than originally specified in the course syllabus (reweighted).

Travel during exams

According to university regulations, students are expected to be available to write scheduled exams at any time during the official December and April examination periods as well as during any scheduled class times. Requests to write a make-up exam because of conflicting travel plans (e.g. flight bookings) or requests to miss an in class exam due to other plans will NOT be considered except under extraordinary circumstances. Students are advised to wait until the final exam schedules are posted before making any travel arrangements.

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[i] Appropriate documentation includes a signed letter from a registered health professional, Queens HC&DS, or documentation of a death such as a bulletin from a memorial service, obituary (newspaper or online) or funeral home letter. Official documents will be copied and originals returned to the student. Note that the PSYC department randomly checks document authenticity and that fraudulent documents will be grounds for a finding of a major departure from academic integrity.