PSYC*1010(02), Course Outline: Winter 2017

General Information

Course Title: Quantification in Psychology

Course Description:

This course will be an introduction to the statistical techniques and approached used in psychological research. Through the course you will develop: 1) an overall appreciation of the statistical techniques used in the psychological sciences; 2) a better understanding of interpreting research findings.

Ultimately, this course will begin by discussing descriptive statistics and the metrics used to describe experimental data. You will learn to discuss both central tendency and varability within data sets. The course will also address probabilistic reasoning and probability distributions. Finally, we will discuss hypothesis testing and focus on the t-test.

By the end of the course, students will be able to successfully interpret and understand statistical reports in the psychological sciences. Students will learn about acceptable research designs and develop an appreciation for good experimental design. Furthermore, students will be able to calculate statistics by hand and provide their own reports on data sets.

Credit Weight: 0.5

Academic Department (or campus): Psychology, University of Guelph Campus

Semester Offering: W17

Class Schedule and Location:

Lecture: Monday,Wednesday, & Friday
3:30 pm – 4:20 pm, ROZH 103

Instructor Information

Instructor Name: Daniel Palmer
Instructor Email: dpalmer@uoguelph.ca
Office location and office hours: Every Wednesday 1pm-3pm

GTA Information

GTA Name: Elizabeth Clancy
GTA Email: clancye@uoguelph.ca

GTA Office Hours: TBD

GTA Name: Vishi Gnanakumaran
GTA Email: vgnanaku@uoguelph.ca
GTA Office Hours: TBD

GTA Name: Jessica Sorenson
GTA Email: jsorenso@uoguelph.ca
GTA Office Hours: TBD

GTA Name: Marian Pitel
GTA Email: mpitel@uoguelph.ca
GTA Office Hours: TBD

Course Content

Specific Learning Outcomes:

1. Scientific Literacy
    i. Experimental Methodology
        - Recognize and understand basic scientific research methodologies
        - Understand appropriate usage of scientific methodology
    ii. Numerical/Statistical Methodology
        - Understand how central tendency and variability describe datasets
        - Understand how descriptive and inferential statistics are calculated
        - Understand how to read statistical test reports and correctly interpret them
    iii. Graphical Representation Methodology
        - Interpret graphs and tables to understand dataset
        - Evaluate graphs and tables in the context of the dataset
2. Scientific/Critical Thinking
    i. Data Analysis
        - Evaluate experimental hypotheses in context of data analysis
        - Determine how to statistically evaluate research question
    ii. Scientific Analysis
        - Develop research plans to evaluate a specific research question
    iii. Ethical Considerations
        - Learn to evaluate data for signs of mis-representation
        - Develop principles and techniques for the accurate and charitable presentation of research findings
3. Statistical Applications
    i. Statistical Calculation
        - Demonstrate ability to use statistical formulas to correctly calculate descriptive statistics
        - Demonstrate ability to use statistical formulas to correctly conduct statistical tests

ii. Statistical Reporting

- Learn to properly interpret and report statistics
- Create statistical reports evaluating and reporting claims
- Write reports using APA Format (APA Publications Manual 6th edition)

Lecture Content:

Week	Topic	Reading	Grading
Week 1 (Jan 9,11,13)	Introduction to Statistics and Research Design Variables Samples & Populations Random Assignment vs Random Sampling	Chapter 1: Introduction to Statistics Appendix A	
Week 2 (Jan 16,18,20)	Experimental Design cont Frequency Distributions Measures of Central Tendency	Chapter 2 Chapter 3	
Week 3 (Jan 23,25,27)	Measures of Central Tendency cont. Measures of Variability	Chapter 3 Chapter 4	
Week 4 (Jan 30, Feb 1, 3)	Finish discussion of descriptive statistics First Exam Preparation Exam #1	Chapter 1-4 (Review)	
Week 5 (Feb 6, 8, 10)	Z-Distribution Probabilistic Reasoning	Chapter 5 Chapter 6	
Week 6 (Feb 13, 15, 17)	Probabilistic Reasoning cont. Inferential Statistics: Hypothesis Testing	Chapter 7 Chapter 8	
Week 7 (Feb 20, 22, 24)	**READING WEEK (NO CLASS)**		
Week 8 (Feb 27, Mar 1, Mar 3)	Inferential Statistics: Hypothesis Testing cont.	Chapter 8	

Week 9 (Mar 6, 8, 10)	Inferential Statistics: Hypothesis Testing cont. Exam #2	Review Chapter 1-8	
Week 10 (Mar 13, 15, 17)	Introduction to t-tests One sample t-test	Chapter 9-10	
Week 11 (Mar 20, 22, 24)	Independent samples t-test Repeated measures t-test	Chapter 10 Chapter 11	
Week 12 (Mar 27, 29, 31)	Repeated measures t-test Correlation	Chapter 11 Chapter 15	
Week 13 (April 3, 5, 7)	Data Analysis Appropriate Usage of Statistics	Review Chapter 9-11,15	

Labs: NA
Seminars: NA

Course Assignments and Tests:

Assignment or Test	**Due Date**	**Contribution to Final Mark (%)**	**Learning Outcomes Assessed**
Mindtap homework: Computerized exercises adapted from textbook	Assignments will be available all week.	15%	3
Quizzes	Friday Jan 20,27 Feb 10,17 Mar 3,17, 24, 31	15%	1
Top-Hat Questions (One per lecture)	Monday & Wednesday Jan 16,18,23,25,30 Feb 6,15,27 Mar 1,6,13,15,20,22,29 April 3	12%	1,2
In-Class Exam #1	Feb 3	15 %	1,2,3
In-Class Exam #2	Mar 10	18 %	1,2,3
Final Exam	April 20	20%	1,2,3
Research Participation (5 hours of SONA participation) /	By last week	5%	2

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
Research Assignment (Written summary of 5 research articles)			

Additional Notes (if required):

Final examination date and time: Thursday, April 20, 2017, 11:30-1:30

Final exam weighting: 20%

Course Resources

Required Texts:

Gravetter, F. J., & Wallnau, L. B. (2017). Statistics for the Behavioral Sciences, 10th edition. Nelson Publishing. **## Get Version with MindTap (Required for Assignments) ##**

The MindTap software included with this text is a useful resource to provide additional practice and homework exercise throughout the course. This version of the textbook is cheaper than buying the book separately. There are two options available to students to purchase this book. Both options are available at the University of Guelph book store or Campus Coop bookstore.

Option #1: Digital version – includes e-book & MindTap Access card

Option #2: Loose-Leaf version – includes Loose leaf copy of the 10th edition book and a Access Card for MindTap.

Recommended Texts: None

Lab Manual: None

Other Resources:

1. Courselink: This course will have a Courselink page during the semester. Various materials and resources will be made available on the website. The in-class quizzes will be posted on Courselink.
2. MindTap software (Included with the main textbook). This will be used to provide additional exercises for students as well the graded homework.
3. TopHat software. The Top Hat software suite is a response system that will be used in class every Monday and Wednesday. You can use Top Hat on your mobile iOS or Android platform, as well as through any tablet or computer.

   Top Hat requires a subscription in order to use. The cheapest subscription pricing is $24 for 4 months of access. Information on subscriptions can be found at

https://tophat.com/pricing/ . Instructions on how to operate Top Hat can be found at https://support.tophat.com/s/article/Student-Top-Hat-Overview-and-Getting-Started-Guide .

The access code for this offering of the course is: 837897.

Field Trips: NA

Additional Costs:

Top Hat software requires a subscription to use. A single semester subscription costs 24$. For additional subscription options, see the following link: https://tophat.com/pricing/.

Course Policies

Grading Policies

1. MindTap Homework: Developing mastery of the course material requires substantial practice. The MindTap system will include several exercises each week to provide additional experience and practice. Some of these exercises will be graded and make up part of your final grade. Deadlines and specific exercises will highlighted on the MindTap system.
2. Top Hat in-class exercise: On most Monday's and Wednesday's, there will be a question posted. For each question, you will be required to answer the question online in the Top Hat system. There will be 16 questions asked throughout the semester, however your final grade will be based on only the best 12 questions. There will be no opportunity to make up a missed Top Hat question, however omitting a Top Hat Question can go towards the 5 omitted questions.
3. Quizzes: On most Friday classes, there will be a quiz. The quizzes will cover material from the previous lectures in the week. There will be a total of 8 quizzes throughout the semester. Four of the quizzes will be available online and completed on the Courselink system. These quizzes will open up Friday morning and must be completed by 11:59pm on Friday. The four remaining quizzes will be completed at the beginning of class on select Fridays. For the final grade, only the top 5 quizzes will be included. The quiz will need to be completed on the day it is assigned. If a quiz is missed, then the missed quiz will count as one of the three dropped quizzes.
4. Exams: The format of the exam will include three distinct sections. These sections will include a multiple choice section, a long-calculation question, and an essay component. All of the exams in this course will be cumulative and cover all material prior to the exam. Beyond all the textbook material, exams will cover material from the lectures. If you are unable to attend an exam due to illness or for serious personal issues, you will have an opportunity to take a make-up exam. Generally, the make-up exam will be conducted during office hours. It is your responsibility to inform the instructor if there are extenuating circumstances surrounding a missed exam. If there are any issues with

grading on an exam, the instructor will remark the question and provide feedback(However, the grade could increase or decrease as a result of this).

Course Policy on Group Work:

All MindTap homework, in-class quizzes, TopHat questions, and exams are required to be completed independently. Any copying of responses on these exercises will be considered as acts of academic misconduct, and will be treated appropriately. In addition, any sharing of answers for quizzes will be treated as academic misconduct.

Course Policy regarding use of electronic devices and recording of lectures:

Electronic recording of classes is expressly forbidden without consent of the instructor. When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

University Policies

Academic Consideration

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the academic calendar for information on regulations and procedures for

Academic Consideration:
Academic Consideration, Appeals and Petitions

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

Academic Misconduct Policy

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Student Accessibility Services as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 54335 or email csdexams@uoguelph.ca or the Student Accessibility Services Website

Course Evaluation Information

Please refer to the Course and Instructor Evaluation Website **.**

Drop date

The last date to drop one-semester courses, without academic penalty, is March 10, 2017. For regulations and procedures for Dropping Courses, see the Schedule of Dates in the Academic Calendar.
Current Undergraduate Calendar