PSYC*1010 (Section 02), Course Outline: FALL 2019

Instructor Information

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TA Information

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General Information

Course Title:	Making Sense of Data in Psychological Research
Class Schedule:	Monday, Wednesday, and Friday 2:30 to 3:20pm
Location:	RICH, Room 2520
Credit Weight:	0.5
Academic Department:	Department of Psychology, University of Guelph Campus
Semester Offering:	Fall 2019
Required Text:	Nolan, S. A., & Heinzen, T. E. **Essentials of Statistics for the Behavioral Sciences**, 4th edition. Worth Publishers, New York. Custom loose-leaf version is available with Launchpad. *Note:* An e-book with Launchpad is also available.
Required Software:	Launchpad (included with text purchase)

Course Description:

This course introduces research designs and quantitative approaches used in psychological research. There are two main objectives: (1) for students to acquire sufficient statistical knowledge to understand and critically assess statistical claims, and (2) for students to begin developing skills in research design and analysis.

With these goals in mind, students will gain experience with **descriptive statistics**, which are used to summarize and describe research findings, and **inferential statistics** which are used to make predictions about populations. Specific topics include distributions, meta-analysis, confidence intervals and p-values, effect size, and regression, as well as the differences between descriptive, correlational, and experimental research designs.

Course Notes:

- This course will teach you how to compute basic statistics tests. For these, calculators are encouraged. Additionally, a major aim of the course is to develop an understanding of when certain statistical procedures are used and why they are appropriate for those research designs.

- You will develop critical thinking and communication that will allow you to understand and evaluate statistical arguments, how to communicate results to others, and gain an understanding of why these are important in psychology.

Learning Outcomes:

1. Critical Thinking and Knowledge Acquisition
    a. At the end of this course, students will understand and be able to describe and apply the core concepts of the scientific method, research methods, and statistics
    b. Each student will be able to understand and apply key concepts in research methods and statistics, formulate questions about psychology, evaluate hypotheses based on statistical tests, analyze experimental and correlational data, and recognize the importance of supporting statements with evidence
    c. Students will be able to identify questions and issues, create a plan to address the problem, and apply their research methods and statistical knowledge to resolve the question or issue

2. Literacy
    a. Students will become proficient in methodological literacy, where they will be able to understand and identify appropriate methodologies in different contexts, evaluate the appropriateness of statistical tests, and apply the appropriate statistics
    b. Specifically, students will be able to recognize and describe basic research methodologies (e.g., random assignment, random sampling), understand why numerical data is used and how to apply it, and demonstrate the ability to compute statistics and interpret the data to test a claim
    c. Students will be able to create and interpret graphs and tables, and evaluate the appropriateness of the content and their source (e.g., discern when a graph is misleading)

3. Communication
    a. Students will develop university-level reading comprehension skills and be able to interpret basic psychological methods and results of psychological research
    b. Students will be able to present their ideas in a logical order and use concrete examples and visual representations of data (e.g., graphs, tables) to illustrate their point
    c. Students will be able to communicate using psychological vocabulary and use a standardized format (APA style) to communicate their results

4. Ethical behaviour
    a. Students will be able to describe ethical principles in conducting research (e.g., accuracy, not misleading audiences)

Course Content

The content of the lectures and associated readings from the text are listed below. Please check Courselink for notices of any changes to the schedule and exam material.

Date	**Readings:** ***Essentials of Statistics for the Behavioural Sciences***	**Graded Homework and Quizzes**
Sep. 6	**NO CLASS**	
Sep. 9, 11, 13 Instructor: Larissa Panetta	Chapter 1: Introduction to Statistics and Research Design	Appendix A (Math Review) Learning Curve Quiz 1 Due Sep. 15
Sep. 16, 18, 20 Instructor: Larissa Panetta	Chapter 2: Frequency Distributions Chapter 3: Visual Displays of Data	Learning Curve Quiz 2 Quiz 3 Due Sep. 22
Sep. 23, 25, 27 Instructor: Larissa Panetta	Chapter 4: Central Tendency and Variability	Learning Curve Quiz 4 Due Sep. 29
Sep. 30 Oct. 2, 4 Instructor: Amanda Rotella	Chapter 5: Sampling and Probability	Learning Curve Quiz 5 Due Oct. 6
Oct. 7, 9, 11 Instructor: Amanda Rotella	Chapter 6: The Normal Curve, Standardization, and z Scores	Learning Curve Quiz 6 Due: Oct. 13

Mon Oct. 14 – Thanksgiving Holiday-No Class. Rescheduled to Nov. 29 Oct 16, 18 Instructor: Amanda Rotella	Chapter 7: Hypothesis Testing with z Tests	Learning Curve Quiz 7 Due Oct. 20
Oct. 21, 24, 25 Instructor: Larissa Panetta	Chapter 8: Confidence Intervals, Effect Size, Statistical Power	**Oct. 21: Midterm 1 Chapters 1-6** Learning Curve Quiz 8 Due Oct. 27
Oct. 28, 30 Nov. 1 Instructor: Larissa Panetta	Chapter 9: The Single-Sample t Test and the Paired-Samples t Test	Learning Curve Quiz 9 Due Nov. 3
Nov. 4, 6, 8 Instructor: Larissa Panetta	Chapter 10: The Independent-Samples t Test	Learning Curve Quiz 10 Due Nov. 10
Nov. 11, 13, 15 Instructor: Amanda Rotella	Chapter 13: Correlation	**Nov. 13: Midterm 2 Chapters 7-10** Learning Curve Quiz 11 (Chapter 13) Due Nov. 17
Nov. 18, 20, 22 Instructor: Amanda Rotella	Chapter 14: Regression	Learning Curve Quiz 12 (chapter 14) Due Nov 24
Nov. 25, 27, 29 Instructor: Amanda Rotella (*note:* Nov 29 is the last day to drop Fall 2019 courses without academic penalty)	Chapter 15: Nonparametric tests	Learning Curve Quiz 13 (chapter 15) Due Dec. 1
Final Exam Date: **December 10th, 8:30-10:30AM** Location: TBA	Cumulative final exam, with emphasis on chapters 13, 14, 15	

Course Assignments and Tests:

Assignment or Test	Due Date	Contribution to Final Mark
Learning Curve on Launchpad (for Nolan & Heinzen, 4th edition)	Weekly assignments due by 11:59 pm on Sunday of the corresponding week	10@ 1.0% = 10% (based on the 10 best scores)
Quizzes on Launchpad (for Nolan & Heinzen, 4th edition)	Weekly assignments due by 11:59 pm on Sunday of the corresponding week	10@1.2% = 12% (based on the 10 best scores)
Research Participation (any combination of credits for SONA research participant pool or written summary of up to 5 research articles).	Last week of class (See SONA information on Courselink)	5%
Midterm 1	Monday Oct. 21st (during class) Chapters 1-6	20%
Midterm 2	Wednesday Nov. 13th (during class) Chapters 7-10	23%
Final Exam		30%

Course Policies

Regular attendance at lectures is strongly recommended. Although lectures will follow the presentation in the textbook, there will be some differences, and the material can be challenging. My goal is to clearly communicate key concepts so that students are not intimidated by the statistical underpinnings of research in psychology, and can use the knowledge gained in this course going forward.

Grading Policies

1. Weekly Launchpad Learning Curve Assignments.

To succeed in this course, you must do the assigned textbook readings and complete the assessments. You should plan to spend at least **7 hours in addition to class time** doing your readings and assessments. The Lauchpad Learning Curve program provides an adapted learning opportunity to test your knowledge of the material in the textbook. You may proceed through the exercises at your own pace. The deadline to receive grades on the Learning Curve assignment is 11:59 pm on the Sunday at the end of the assigned week. Your 10 best scores will each count toward 1% of your final grade. That is, this assignment counts toward 10% of the final grade

2. Weekly Launchpad Quizzes.

There is a multiple-choice quiz for each assigned chapter in the textbook. Similar questions will also appear on the midterms and final exam. You should not begin a quiz until you have mastered the corresponding Learning Curve assignment. Each quiz has a time limit of 30 minutes, and you may attempt a quiz for a specific chapter twice. The quiz attempt must be completed by 11:59 pm of the corresponding week. Your overall quiz grade will be based on the best 10 per chapter quiz marks. Each of the 10 best quiz marks will count toward 1.2% of the final grade for a total contribution of 12%.

3. Research participation assignments.

One of the best ways to learn about research is to participate, and in particular, there are special benefits for quantification students because participation will give you a chance to see how the concepts of this course are applied in actual research projects that are being carried out at the University of Guelph. Furthermore, if you choose to continue on in Psychology, you may one day be carrying out your own research as part of an undergraduate honours thesis, research internship, or research project. Consequently, you may enjoy talking to more senior students in the Psychology program, either upper year undergraduates students, graduate students, or research interns/assistants. In this course, you may learn up to 5% for participating in the psychological studies occurring in the department (these are advertised in the SONA network).

There are also options for those who choose not to participate in a study. If you are not interested in participating in a study or if there are no studies available on the SONA network, you may also choose the option of reading published journal articles that will be made available on the SONA website (address listed below). Specifically, for each of the 5 credits participation time, you will need to read one of the articles on Courselink and write a summary for each in the format described under “Alternative Assignment” tab on the SONA website.
Thus, there are two types of research participation assignment: those based on actual research participation and those based on reading published articles on Courselink and writing the required summary. Many of you will find that you end up doing both types of assignment to make up your 5% for the Research Participation mark. For example, you may have 3% based on participation in 3 hours of experiments and another 2 % on summaries from 2 of the articles posted on the SONA website. All research participation and papers are due by no later than

11:59 on the last day of scheduled classes. It is a good idea to spread these out over the term so that you are not overwhelmed at the end of the year.
For specific details about this assignment, go to:
https://www.uoguelph.ca/psychology/research/sona

4. Exams: The two midterm exams and the final exam will comprise multiple-choice questions similar to those on the weekly quizzes. Note that each student must take all three exams. In the event that you miss a midterm exam due to documented medical, psychological or compassionate reasons, then the score on that missed midterm will be calculated as the average percentage grade of your completed midterm and final exam. There will be NO makeup midterm exams.

Course Policy on Group Work:

Each student is expected to complete Learning Curve assignments, online quizzes, and exams on his or her own. If there is evidence that students are collaborating while completing online assessments, then those cases will be dealt with as per the regulations on Academic Misconduct. However, students are encouraged to form study groups in preparation for the graded assessments.

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 accessibility@uoguelph.ca or see the https://wellness.uoguelph.ca/accessibility/

Drop date

The last date to drop one-semester courses, without academic penalty, is Friday November 29, 2019. For regulations and procedures for Dropping Courses, see the Schedule of Dates in the Academic Calendar. Current Undergraduate Calendar