

# PSYC\*1010 (Section 01), Course Outline: Winter 2021

## General Information

**DUE to the COVID-19 pandemic, this course is offered in an alternative format.**

**Alternative Delivery Asynchronous – AD-A Remote: no day and time for class**

**Course Title: Making Sense of Data in Psychological Research**

**Course Description:** This course is an introduction to statistical methods in research. The goals of this course are to provide: 1) sufficient knowledge of statistics so that you may critically evaluate claims based a statistical argument; and 2) the statistical tools you need to carry out your own empirical research. The course begins with descriptive statistics (techniques of summarizing or describing research findings) and progresses to inferential statistics (techniques for making predictions about populations based on findings from samples).

To succeed in this course, it is essential that you keep up with the readings and homework. Effective time management is critical. The grade assessments include online homework and quizzes, a brief report, in addition to two midterm exams, and a final exam. Online materials include graded adaptive learning exercises and assessment quizzes that are accessible via the LaunchPad link on the course homepage. You should take a disciplined approach, watch lectures, keep up with the readings in the textbook, complete the LaunchPad assignments, and make sure to ask questions when you are unsure.

Although a significant part of the course entails numerical calculations (a stand-alone calculator is recommended), a major aim of the course is to develop an understanding of which statistical procedures are appropriate for different research designs. The statistical procedures are tools that guide researchers' conclusions about research questions. Thus, you will develop critical thinking skills (e.g., ability to analyze and evaluate an argument), and communication skills (e.g., writing, listening, and note-taking skills).

**Credit Weight:** 0.5

**Academic Department (or campus):** Psychology (University of Guelph)

**Semester Offering:** Winter 2021

**Class Schedule and Location:** This course is in an alternative delivery asynchronous (ADA-remote) format and therefore lectures will be provided via CourseLink under the "Content" section.

## **Instructor Information**

Instructor Name: **Anna Dawczyk, Ph.D.**

Instructor Email: [adawczyk@uoguelph.ca](mailto:adawczyk@uoguelph.ca)

All questions related to course content and assessments should be posted on the Courselink discussion boards so that everyone can benefit from the discussion. The discussion boards will be monitored, and responses will be provided within 48 hours Monday-Friday. In certain cases, an appointment will be set up via Zoom to provide further assistance.

Email is reserved for communication about urgent and personal matters only (e.g., illness). All emails must come from a @uoguelph.ca email account. Emails from other accounts (e.g., @gmail.com) will not be answered.

Office location and office hours: office hours are on an as-needed basis and therefore will be scheduled at a time convenient for Dr. Dawczyk or a TA, and you via Zoom.

## **GTA Information**

Brett Melanson  
[bmelanso@uoguelph.ca](mailto:bmelanso@uoguelph.ca)

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GTA office location and office hours: office hours are on an as-needed basis and therefore will be scheduled at a time convenient for a TA and you via Zoom.

## **Course Content**

### **Specific Learning Outcomes:**

The purpose of this course is to introduce you to research designs and quantitative approaches used in psychological science, with an emphasis on conceptual understanding. By the end of this course, students will be able to:

1. Display Knowledge Acquisition of Core Concepts and Express Critical Thinking by:
  - a. Describing and applying the core concepts of the scientific method, research methods, and statistics;

- b. Formulating questions about psychology, evaluating hypotheses based on statistic tests, analyzing correlational and experimental data, and recognizing the importance of supporting statements with evidence; and
  - c. Identifying questions and issues, create a plan to address them, and apply research methods and statistical knowledge to resolve the question or issue.
2. Demonstrate Literacy by:
- a. Recognizing and describing basic research methodologies (e.g., random assignment, random sampling), understanding why numerical data is used and how to apply it, and demonstrating the ability to compute statistics and interpret data to test a claim;
  - b. Understanding and identifying appropriateness of methodologies in different contexts, and statistical tests, and;
  - c. Creating and interpreting graphs and tables, and evaluating the appropriateness of the content and their sources (e.g., discern when a graph is misleading).
3. Appropriately Communicate by:
- a. Applying university-level reading comprehension to acquire information;
  - b. Presenting ideas in a logical order and using concrete examples and visual representations of data (e.g., graphs, tables) to illustrate points; and
  - c. Using key concepts when presenting statistical results.
4. Show Ethical Behaviour by:
- a. Describing ethical principles in conducting and disseminating research as it relates to accurate (non-misleading) presentation of research results.

### Lecture Content

Lectures will be available on Courselink under the “Content” section. Lectures are recorded with audio and video and therefore you require access to a device that can play both.

Date	Readings	Assessments
Week 1: Jan. 11 <sup>th</sup> – 17 <sup>th</sup>	Appendix A (math review) Chapter 1: Intro to Stats and Research Design	Learning Curve 1 Quiz 1 Due: Jan. 24 <sup>th</sup>
Week 2: Jan. 18 <sup>th</sup> – 24 <sup>th</sup>	Chapter 2: Frequency Distributions Chapter 3: Visual Displays of Data	Learning Curve 2 and 3, Quiz 2 and 3 Due: Jan. 24 <sup>th</sup>
Week 3: Jan. 25 <sup>th</sup> – 31 <sup>st</sup>	Chapter 4: Central Tendency and Variability Chapter 5: Sampling and Probability	Learning Curve 4 and 5 Quiz 4 and 5 Due: Jan. 31 <sup>st</sup>

Date	Readings	Assessments
Week 4: Feb. 1 <sup>st</sup> – 7 <sup>th</sup>	Chapter 6: The Normal Curve, Standardization, and z Scores	Learning Curve 6 Quiz 6 Due: Feb. 7 <sup>th</sup>
Week 5: Feb. 8 <sup>th</sup> – 14 <sup>th</sup>	Chapter 7: Hypothesis Testing with z Scores	Feb 8 <sup>th</sup> : Midterm 1 (chaps 1-6) Learning Curve 7 Quiz 7 Due: Feb. 14 <sup>th</sup>
Feb. 15 <sup>th</sup> – 19 <sup>th</sup> :	Winter Break	
Week 6: Feb. 22 <sup>nd</sup> – 28 <sup>th</sup>	Chapter 8: Confidence Intervals, Effect Size, and Statistical Power	Feb. 26 <sup>th</sup> Stats in the Media part 1 due Learning Curve 8 Quiz 8 Due: Feb 28 <sup>th</sup>
Week 7: Mar. 1 <sup>st</sup> – 7 <sup>th</sup>	Chapter 9: The Single-Sample <i>t</i> Test and the Paired-Samples <i>t</i> Test	Learning Curve 9 Quiz 9 Due: Mar. 7 <sup>th</sup>
Week 8: Mar. 8 <sup>th</sup> – 14 <sup>th</sup>	Chapter 10: The Independent-Samples <i>t</i> Test	Learning Curve 10 Quiz 10 Due: Mar. 14 <sup>th</sup>
Week 9: Mar. 15 <sup>th</sup> – 21 <sup>st</sup>	Chapter 13: Correlation	Learning Curve 13 Quiz 13 Due: Mar 21 <sup>st</sup>
Week 10: Mar. 22 <sup>nd</sup> – 28 <sup>th</sup>	Chapter 14: Regression	Mar. 22 <sup>nd</sup> : Midterm 2 (chaps 7-10, 13) Learning Curve 14 Quiz 14 Due: Mar 28 <sup>th</sup>
Week 11: Mar. 29 <sup>th</sup> – Apr. 4 <sup>th</sup>	Chapter 15: Chi-Square Tests	Learning Curve 15 Quiz 15 Due: Apr 4 <sup>th</sup>
Week 12: Apr. 5 <sup>th</sup> – 12 <sup>th</sup>	Chapter 16: Choosing and Reporting Statistics	Apr 9 <sup>th</sup> : Stats in the Media part 2 due Learning Curve 16 Quiz 16 Due Apr. 11 <sup>th</sup>

**Labs:** none

**Seminars:** none

### Course Assignments and Tests

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
<b>Learning Curve on Launchpad</b> for Nolan & Heinzen (5 <sup>th</sup> Ed.)	Weekly assignments due by 11:59 pm on the Sunday of the corresponding week.	5% (Based on 10 best scores; 10 at 0.5% each)	1 a-c; 2 a-c; 3 a-3; 4a
<b>Quizzes on Launchpad</b> for Nolan & Heinzen (5 <sup>th</sup> Ed.)	Weekly assignments due by 11:59 pm on the Sunday of the corresponding week.	15% (Based on 10 best scores; 10 at 1.5%)	1 a-c; 2 a-c; 3 a-3; 4a
<b>Research Participation</b> (any combination of SONA research participant pool or written summary of up to three research articles)	Last week of class (see SONA information on Courselink)	3%	1 a-c; 2 a-c; 3 a-3; 4a
<b>Midterm 1</b>	Mon Feb 8 <sup>th</sup> (on-line via Courselink) Chapters 1 – 6	20%	1 a-c; 2 a-c; 3 a-3; 4a
<b>Midterm 2</b>	Mon Mar 22 <sup>nd</sup> (on-line via Courselink) Chapters 7 – 10, 13	20%	1 a-c; 2 a-c; 3 a-3; 4a
<b>Statistics in the Media</b>	Part 1 due: Feb. 26 <sup>th</sup> Part 2 due: Apr 9 <sup>th</sup> Submit via Dropbox on Courselink (encouraged to submit earlier)	12% (2% + 10%)	1 a-c; 2 a-c; 3 a-3; 4a
<b>Final Exam</b>	Apr 27 <sup>th</sup> 7:00 – 9:00 pm	25%	1 a-c; 2 a-c; 3 a-3; 4a

### Missed Evaluations

**Midterm:** If you are unable to complete the online midterm due to acute medical, academic, or personal reasons, you must notify Dr Dawczyk immediately by email and the midterm may be rescheduled to take place within 4 days of the midterm date. If that is not possible, then the final exam will count toward 45% of the final grade. This change will be implemented when final grades are submitted and will not be reflected on CourseLink.

**Final exam.** Students who do not write the final exam must follow the University's procedures for requesting [Academic Consideration](#).

**Final examination date and time:** April 27<sup>th</sup>, 2021 from 7:00 – 9:00 pm.

**Final exam weighting:** 25%

### **Course Resources**

#### **Required Texts:**

Nolan, S. A., & Heinzen, T. E. (2020). *Essentials of Statistics for the Behavioral Sciences* (5th ed.). New York: Worth Publishers.

Note: The text is available in hard-copy and as an e-book. However, you need to purchase either the textbook (which comes with Launchpad) or, Launchpad (which comes with the e-book). Do NOT purchase the e-book as it does not come with Launchpad.

**Recommended Texts:** none

**Lab Manual:** none

#### **Other Resources:**

1. Courselink is the main source of lecture materials, course information, updates, assignments involving Dropbox, grades, discussion board, etc.
2. Launchpad is required for the course and will be used for the weekly learning curve assignments, and quizzes. The e-textbook is available through Launchpad.
3. Calculator – it is highly recommended that you use a stand-alone calculator for this course.

**Field Trips:** none

**Additional Costs:** none

### **Course Policies**

#### **Grading Policies**

**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 Launchpad Learning Curve program provides an adapted learning opportunity to test your knowledge of the material. You may proceed through the exercises at your own pace until you achieve mastery. 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 0.5% of your final grade. That is, this assignment counts toward 5% of the final grade.

**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 first. Each quiz has a time limit of 30 minutes. You must complete the quiz by 11:59 pm of the corresponding week. Your overall quiz grade will be based on the best 10 marks. Each of the 10 best quiz marks will count toward 1.5% of the final grade for a total contribution of 15%. Once the deadline has passed, you will be able to review the incorrect items on your quiz (at this point you may attempt the quiz again, but it will not be graded).

**Research Participation Assignments (SONA).** One of the best ways to learn about research is to participate. 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. You may earn up to 3% toward your final grade for participating in the psychological studies occurring in the department (advertised in the SONA network).

If you prefer not to participate in a study or if there are no studies available on the SONA network, you may 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 3 credits you will need to read one of the articles on the "Alternative Assignment" tab on the SONA website and write a summary for each in the specified format. Thus, there are two types of research participation assignments based on: (a) actual research participation and (b) reading published articles on the SONA website and writing the required summary. For example, you may have 2% based on participation in 2 hours of experiments and another 1% on a summary from 1 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>

**Statistics in the Media**

The purpose of this assignment is to become a conscious consumer of statistical research presented in the media. This assignment involves two parts; the second part builds on the first. The first part will involve identifying an example of a statistical research finding presented in recent (early 2021) mainstream media (e.g., newspaper, magazine, podcast, TV, etc.), and then by locating the original study or peer-reviewed journal article that was discussed in the media source. A template will be provided for you to fill out, and then submit via Dropbox by the due date.

The second part of the assignment will involve writing a brief report based on the information presented in the media source and the original study. You will describe the research question(s) and hypotheses, identify the independent and dependent variable(s), describe the study design, summarize the conclusions, identify any pertinent information in the actual study that was excluded from the media source, and discuss whether the media source presented the research findings in a biased way. Detailed assignment instructions are available on Courselink.

**Mid-Term Exams and Final Exams.** The two midterm exams and the final exam will comprise multiple-choice questions similar to those on the weekly quizzes.

**Re-Grading of Assignments Policy**

If you believe an assignment has not been accurately graded, you are required to take your graded assignment and highlight the areas where you feel you should have earned grades. You will also be required to provide a detailed written explanation about why your grade should be different. Note that you will be required to accept the re-grade, whether it be higher or lower.

**Course Policy on Group Work**

Each student is expected to complete the Learning Curve assignments, online quizzes, midterms, Statistics in the Media assignment, and final exam 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. Similarly, any material created by the course instructor is intended for those enrolled in this course solely. Under no circumstances are you allowed to disseminate course materials to external parties.



## **Student Rights and Responsibilities when Learning Online**

### *Privacy Rights*

Learning sessions (e.g., mid-term reviews) held via Zoom may be recorded for the purpose of sharing the recordings on Courselink to allow you to access the information at your own pace. As a student, you have the right to protect your privacy online and may choose to turn off your video and/or audio when in session. In the event that your video and/or audio remain on, please note that you are consenting to your presence in lecture recordings. Under no circumstances are you permitted to transmit copies of the recordings to others, without the express written consent of the instructor.

### **Recording of Lecture Materials**

By enrolling in a course, unless explicitly stated and brought forward to their instructor, it is assumed that students agree to the possibility of being recorded during lecture, seminar or other “live” course activities, whether delivery is in-class or online/remote.

If a student prefers not to be distinguishable during a recording, they may:

1. Turn off their camera;
2. Mute their microphone; and/or
3. Edit their name (e.g., initials only) upon entry to each session
4. Use the chat function to pose questions.

Students who express to their instructor that they, or a reference to their name or person, do not wish to be recorded may discuss possible alternatives or accommodations with their instructor.

### **Online Behaviour**

According to the University Secretariat, students have a responsibility to help support community members’ access to the tools they need to engage in their learning and development, both in and outside of the classroom. An example of this type of responsibility is the requirement to abide by the following:

Section 4.3.3. Disruption - to not interfere with the normal functioning of the University, nor to intimidate, interfere with, threaten or otherwise obstruct any activity organized by the University, including classes, or to hinder other members of the University community from being able to carry on their legitimate activities, including their ability to speak or associate with others.

As such, appropriate online behaviour will not be tolerated. Examples of inappropriate online behaviour include:

- Posting inflammatory messages about your instructor or fellow students
- Using obscene or offensive language online
- Copying or presenting someone else's work as your own
- Adapting information from the Internet without using proper citations or references
- Buying or selling term papers or assignments
- Posting or selling course materials to course notes websites
- Having someone else complete your quiz or completing a quiz for/with another student
- Stating false claims about lost quiz answers or other assignment submissions
- Threatening or harassing a student or instructor online
- Discriminating against fellow students, instructors and/or TAs
- Using the course website to promote profit-driven products or services
- Attempting to compromise the security or functionality of the learning management system
- Sharing your username and password

## **University Policies**

### **Disclaimer**

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings and academic schedules. Any such changes will be announced via Courselink and/or class email. All University-wide decisions will be posted on the [COVID-19 website](#) and circulated by email.

### **Illness**

The University will not normally require verification of illness (doctor's notes) for fall 2020 or winter 2021 semester courses. However, requests for Academic Consideration may still require medical documentation as appropriate.

### **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, 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 [Student Accessibility Services](#) as soon as possible. For more information, contact SAS at 519-824-4120 ext. 54335 or email [accessibility@uoguelph.ca](mailto:accessibility@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 April 12, 2021. For regulations and procedures for Dropping Courses, see the [Schedule of Dates in the Academic Calendar](#). Instructors must provide [meaningful and constructive feedback, at minimum 20% of the final course grade, prior to the 40th class day](#). For courses which are of shorter duration, 20% of the final grade must be provided two-thirds of the way through the course.

### **Additional Course Information**

Course instructors are allowed to use software to help in detecting plagiarism or unauthorized copying of student assignments. Plagiarism is one of the most common types of academic misconduct on our campus. Plagiarism involves students using the work, ideas and/or the exact

wording of other people or sources without giving proper credit to others for the work, ideas and/or words in their papers. Students can unintentionally commit misconduct because they do not know how to reference outside sources properly or because they don't check their work carefully enough before handing it in. Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt.

In this course, your instructor will be using Turnitin.com to detect possible plagiarism, unauthorized collaboration or copying as part of the ongoing efforts to prevent plagiarism in the College of Social and Applied Human Sciences. A major benefit of using Turnitin is that students will be able to educate and empower themselves in preventing misconduct. In this course, you may screen your own assignments through Turnitin as many times as you wish before the due date. You will be able to see and print reports that show you exactly where you have properly and improperly referenced the outside sources and materials in your assignment.