

# **PSYC\*2360, 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:** Psychological Methods and Statistics

### **Course Description:**

This course builds on students' understanding of basic psychological research methods and statistics, with an emphasis on designing, interpreting, and communicating research. Topics covered throughout the term may include: research ethics, the scientific method, qualitative and quantitative measures, reliability and validity, complex research designs using multiple predictor or independent variables, and the reading and writing of journal articles.

By the end of this course, successful students will be able to:

- Identify, apply, and evaluate different research methods
- Critically evaluate scientific research
- Conduct a literature search and identify and summarize the relevant literature
- Develop research hypotheses and design a study to test their research hypotheses
- Write a research proposal (i.e., introduction, method, results)

**Credit Weight:** 0.50

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

**Semester Offering:** F20

### **Class Schedule and Location:**

**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**

**Lectures will be presented using narrated power point slides.**

**Slides for each week will posted Monday at 7 AM.**

**Details are provided in the Lecture Content section below.**

## **Instructor Information**

**Instructor Name:** Harvey H. C. Marmurek, PhD

**Instructor Email:** hmarmure@uoguelph.ca

**Office hours:** Appointment by email to arrange online meeting via Skype/Zoom.

# **Graduate Teaching Assistant Information**

TBA.

## **Course Content**

### **Specific Learning Outcomes:**

#### A. Critical and Creative Thinking

##### 1. Depth and Breadth of Knowledge

- Describe core concepts in the scientific method, research methods and statistics, and indicate how these ideas work together in the scientific method
- Understand and apply key concepts in research methods and statistics as it relates to the scientific method

##### 2. Inquiry and Analysis

- Formulate questions about psychology. Know how to find relevant evidence.
- Evaluate hypotheses based on data
- Recognize the importance of supporting statements with evidence

##### 3. Problem Solving

- Identify issues and create a plan to address the problem using knowledge of research methods and statistics

#### B. Literacy

##### 1. Methodological literacy: The ability to understand, evaluate, and apply appropriate methodologies for rigorous psychological science

- Recognize and describe basic research methodologies (e.g., random assignment, random sampling; qualitative vs. quantitative methods)

##### 2. Quantitative literacy

- Understand the use of numerical data
- Demonstrate the ability to interpret data

##### 3. Visual literacy:

- Create and interpret graphs and tables

#### C. Communication

##### 1. Reading Comprehension (e.g., reading original research articles)

- Understand sophisticated theoretical and empirical writing in psychology

##### 2. Listening skills (a component of Oral communication).

- Determine the key points in an auditory presentation
- Summarize information in a clear and concise way

##### 3. Written Communication

- Present ideas in a logical order, using concrete examples including graphs and tables
- Write using the appropriate vocabulary, presenting statistical results in (American Psychological Association) format (see Purdue Owl)

D. Personal and ethical behaviour

1. Ethical issues in research
  - Understand ethical principles in conducting research
2. Personal organization/ time management
  - Recognize the importance of planning for completion of tasks
  - Deal with intense time pressures, prioritize and complete tasks to schedule
  - Demonstrate personal accountability and responsibility

On successful completion of this course, you will be able to accomplish the following:

- A. Identify and describe key concepts relating to the scientific method, research design, and inferential and descriptive statistics. Apply these concepts when solving problems (Learning outcomes: A1-3; B1-3; C1-2; D2)
- B. Describe the stages involved in scientific reasoning and specify the role and importance of quantification in the scientific method. (Learning outcomes: A1-3; B1-3; C1-3; D2)
- C. Analyze a research question, identifying the relevant measured and manipulated variables. Indicate whether the study is a true experiment, a quasi-experiment, or correlational design and describe the relative strengths and weaknesses of each type of design. Propose a study based on research related to the question. (Learning outcomes: A1-3; B1-2; C1; C3; D1-2)
- D. Identify the independent and dependent variables in a research study. Provide operational definitions of variables. (Learning outcomes: A1-3; B1-2)
- E. Interpret information presented in graphical format (graphs) with an emphasis on statistical interactions. (Learning outcomes: B3)
- F. Explain what hypothesis testing is, indicating its purposes, the processes involved, and the places where error can enter into the process. Indicate the role of probability in hypothesis testing and inferential statistics. (Learning outcomes: A1-3; B1-2; C1-3)

## Content and Deadlines:

The table below lists the content of the associated readings from the text, and graded assignments (Quiz, Learning Curve, and Research in Action due dates).

Week #	Readings: Discovering the Scientist Within (Lewandowski, Ciarocco & Strohmets, 2e)	Graded Assignments Due dates are for Learning Curve (LC), Quizzes (Q), and Research in Action (RIA)
1	Chapter 1: Psychology as a science	LC1, Q1, RIA 1 Due: Jan 24
2	Chapter 2: The research process Chapter 3: Ethics	LC2, Q2, RIA 2, LC3, Q, RIA3 Due: Jan 24
3	Chapter 4: Research designs	LC4, Q4; RIA 4 Due: Jan 31
4	Chapter 5: Qualitative research	LC5, Q5; RIA 5 Due: Feb 7
5	Chapter 6: Observational research Chapter 7: Correlational research	LC6, Q6, RIA 6 LC7, Q7, RIA 7 Due Feb. 14
	<b>Winter Break Feb. 15-21</b>	
6	Plan for research proposal  Midterm Chapters 1-7	Due Sunday Feb 28  Online Friday Feb 26

Week #	Readings: Discovering the Scientist Within (Lewandowski, Ciarocco & Strohmets, 2e)	Graded Assignments Due dates are for Learning Curve (LC), Quizzes (Q), and Research in Action (RIA)
7	Chapter 8: Two-group design	LC8, Q8, RIA 8 Due: March 7
8	Chapter 9: Multi-group design	LC9, Q9, RIA9 Due: March 14
9	Chapter 10: Within-subjects Design	LC10, Q10, RIA 10 Due March 21
10	Chapter 11: Factorial design	LC11, Q11, RIA 11 Due March 28
11	Chapter 12: Mixed Design  Research Proposal	LC12, Q12, RIA 12 Due April 4 Due April 4
12	Chapter 13: Program Evaluation	LC13; Q13; RIA 13 Due Monday April 12

**Final Exam: (online)**

## Course Assignments and Tests:

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
Weekly online learning curve, quizzes, and research in action	Weekly assignments due by 11:59 pm on Sunday of the corresponding week.	15%	A1-3; B1-3; C1-3; D1-2
Midterm examination	<b>Friday February 26 12:00 PM – 5:00 PM (online)</b>  Chapters 1-7	30%	A1-3; B1-2; C1-C3; D2
Plan for research proposal	Submitted on Dropbox: Sunday February 28	10%	A1-3; B1-3; C1-2; D2
Research proposal	Submitted on Dropbox: Sunday April 4	15%	A1-3; B1-3; C1; C; D1-2
Final Exam	<b>(online)</b> <b>Chapters 8 – 13</b>	30%	A1-3; B1-3; C1-3; D1-2

## Course Resources

### Required Text:

Lewandowski, G. W., Ciarocco, N. J., & Strohmets, D. B. (2019). *Discovering the Scientist Within: Research Methods in Psychology. Second Edition*. Worth Publishers, New York.

**Note: I strongly advise you NOT to purchase a used copy of the textbook. You are required to complete assignments using Launchpad software for which an access code is included with the purchase of a new textbook. You may also purchase a standalone access code that provides access to an e-book version of the textbook.**

## **Other Resources:**

1. Courselink Website. Narrated summary slides for the assigned chapter readings will be provided on the Courselink website.
2. Launchpad software (included with a new text or purchased separately) provides an e-book and the learning resources (Learning Curve, Quizzes, and Research in Action).
  - Instructions on how to access Launchpad are provided on Courselink.
3. For the midterm and final examination, you will need to download the [Respondus Browser Lockdown and Monitor software](#):  
<https://opened.uoguelph.ca/instructor-resources/resources/Instructions-for-Taking-Practice-Quiz-Final-Exam.pdf>

## **Course Requirements**

### **Learning Curve, Quizzes, and Research in Action activities. (15%)**

Learning Curve is an adaptive learning tool that varies the difficulty of questions as you aim to achieve a mastery level. These should be completed once you have read the assigned chapter and summary slides.

The Research in Action activity reviews the main concepts in the context of a research study.

Once you have achieved mastery on the Learning Curve, and completed the Research in Action activity, you should attempt the Quiz for the assigned chapter.

The deadline for completing the weekly trio of assignments for each chapter is 11:59 pm on the Sunday at the end of the assigned week. (see Launchpad for official due dates).

Grades will be viewed in the Launchpad gradebook and transferred to the Courselink gradebook during the first week of the Final Examination period.

### **Plan for Research Proposal (10%)**

Working individually, students will compose an essay with three subheadings: Introduction; Method; Annotated Bibliography. The Introduction should describe your general topic of interest, the variables of interest, the operational definitions for the variables of interest, and your research hypothesis or hypotheses. The Method should describe your participants, recruitment procedures, materials, and procedural operations. The annotated bibliography should provide details of at least **three** related peer reviewed journal articles that establish a link between existing research and how your proposal will advance knowledge on the topic. APA referencing style is required. The maximum number of pages is five, double spaced with a font size of 12. The list of References does not count toward that maximum. A sample plan for a research proposal will be posted on Courselink.

## **Research Proposal (15%)**

Working individually, students will prepare a research proposal. The proposal should include a title page, an Introduction, a Method section, and a Results section. An Abstract is not required. Although the project will not be conducted, the Results section should indicate the types of statistical analyses that are planned, and present expected results that would support the hypotheses. Expected results may be presented as tables or figures. APA guidelines for scientific writing will be followed. The maximum length is 10 pages not including the list of References. A sample research proposal will be posted on CourseLink.

## **Midterm (30%)**

The midterm exam (Feb. 26) will comprise 50 multiple-choice questions similar to those on the weekly quizzes. The midterm will cover material from chapters 1 to 7.

**Respondus lockdown browser and monitoring will be in effect.**

## **Final Exam (30%)**

The final exam will comprise 50 multiple-choice questions similar to those on the weekly quizzes. The questions will test material from chapters 8 to 13.

**Respondus lockdown browser and monitoring will be in effect.**

**Attendance:** Regular engagement with the weekly readings and assignments is strongly recommended. The narrated summary slides will closely follow the presentation in the textbook given that many students find the material challenging. My goal is to communicate key concepts in a clear and uncomplicated fashion.

**Effective time management is critical.** To succeed in this course, it is essential that you keep up with the readings, weekly learning curve, quiz and research in action activities. You should take a disciplined approach in planning to complete the graded assignments. I will post weekly updates reviewing upcoming assignments on the Announcements board each Monday. You are encouraged to ask the professor questions when you are struggling. You will also be able to communicate with other students via the Discussion link on the course homepage.

## **Late or missed deadlines:**

**Plan for research proposal and research proposal.** Unless an extension has been granted, 5% of the value of the assignment will be deducted for each day of delay.

**Midterm.** In the event that a student misses the midterm exam due to medical, psychological or compassionate reasons, then the midterm may be re-scheduled within 3 days. If the midterm cannot be rescheduled, then the final exam will count toward 60% of the final grade. If a student fails to provide appropriate grounds for academic consideration, the grade on the missed midterm will be 0.



**Final exam.** Students who do not write the final examination should follow the University's procedures for requesting academic consideration (see below).  
Undergraduate Grading Procedures

**Page Limits:**

Marks will be docked for exceeding the page limit on literature review and research proposal. 5% deduction if longer than ½ page or more over the page limit

**Course Policy on Group Work:**

Each student is expected to complete all assignments on their 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**

*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:

[Academic Consideration, Appeals and Petitions](#)

### **Grounds for Academic Consideration**

### **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 Monday April 12, 2021.

For regulations and procedures for Dropping Courses, see the [Schedule of Dates in the Academic Calendar](#).

[Current Undergraduate Calendar](#)