

PSYC*2360, Course Outline: Winter 2022

General Information

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 in APA style (i.e., introduction, method, results)

Credit Weight: 0.50

Academic Department (or campus): Department of Psychology

Semester Offering: W22

Class Schedule and Location: Mon & Wed 8:30-9:20 AM, ALEX 200

All course related material must be accessed through Courselink.

Instructor Information

Instructor Name: Danny M. Pincivero, PhD

Instructor Email: dpinci@uoguelph.ca

Office hours: Appointment by email.

Graduate Teaching Assistant Information

Seminar Coordinator: Noah Bass nbass@uoguelph.ca

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Seminar 01:	Mon	11:30	MCKN 314
Seminar 02:	Fri	10:30	MCKN 314
Seminar 03:	Mon	4:30	MCKN 314
Seminar 04:	Wed	11:30	MCKN 314
Seminar 05:	Tues	10:30	MCKN 313
Seminar 06:	Tues	1:30	MCKN 314
Seminar 07:	Wed	4:30	MCKN 314
Seminar 08:	Wed	4:30	MCKN 313
Seminar 09:	Thurs	9:30	MCKN 313
Seminar 10:	Thurs	10:30	MCKN 313

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. Oral and Written Communication

- Present ideas in a logical order, using concrete examples including graphs and tables
- Talk and write using the appropriate vocabulary, presenting statistical results in the technical format following American Psychological Association guidelines
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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:

DATE	LECTURE TOPIC	READINGS	ACTIVITY
WEEK 1 Jan 10-14	Introduction to research and statistics.	Chapter 1	
WEEK 2 Jan 17-21	The research process and research ethics.	Chapters 2 & 3	QUIZ 1 opens Jan 19 (weeks 1 & 2 content)
WEEK 3 Jan 24-28	Research designs	Chapter 4	
WEEK 4 Jan 31 – Feb 4	Qualitative research.	Chapter 5	QUIZ 2 opens Feb 2 (weeks 3 & 4 content)
WEEK 5 Feb 7 – Feb 11	Observational research	Chapter 6	
WEEK 6 Feb 14 – Feb 18	Correlational research.	Chapter 7	QUIZ 3 opens Feb 16 (weeks 5 & 6 content)
WEEK 7 Feb 21 – Feb 25	WINTER BREAK (no classes)		
WEEK 8 Feb 28 – Mar 4	Two-group design MID-TERM EXAM: Wed March 2	Chapter 8	
WEEK 9 Mar 7 – 11	Multi-group design.	Chapter 9	
WEEK 10 Mar 14 – 18	Within-subjects design.	Chapter 10	QUIZ 4 opens Mar 16 (weeks 8 & 9 content)
WEEK 11 Mar 21 – 25	Factorial design.	Chapter 11	
WEEK 12 Mar 28 – Apr 1	Mixed design	Chapter 12	QUIZ 5 opens Mar 30 (weeks 10 & 11 content)
WEEK 13 Apr 4 – Apr 8	Review		

NOTE: The instructor reserves the right to modify the schedule of topics above. Every effort will be made to adhere to this schedule as close as possible.

Course Assignments and Tests:

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
Online quizzes	Please refer to course schedule	10%	A1-3; B1-3; C1-3; D1-2
Midterm Exam	Wednesday March 2 Chapters 1-7	25%	A1-3; B1-2; C1-3; D2
Plan for research proposal	Submitted on Dropbox: Thursday Feb 17 (11:59 PM)	10%	A1-3; B1-3; C1-2; D2
Research proposal	Submitted on Dropbox: Friday March 25 (11:59 PM)	15%	A1-3; B1-3; C1-3; D1-2
Final Exam	TBA (online) Chapters 8 – 13	30%	A1-3; B1-3; C1-3; D1-2
Seminar Presentation	Final 3 weeks	5%	A 1-3; B1-3; C 1-3; D 1-2
Seminar attendance	Please refer to seminar schedule on Courselink	5%	A 1-3; B1-3; C 1-3; D 1-2

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.

ISBN (e-book): 9781319152451

ISBN (paperback): 9781319107369

Publisher/book website: [Discovering the Scientist Within, 2nd Edition | Macmillan Learning for Instructors](#)

Other Resources:

Additional resources will be provided on Courselink.

For the midterm and final examination, you will need to down the Respondus Browser Lockdown (the monitoring/camera system will not be implemented).

<https://download.respondus.com/lockdown/download.php?id=273932365>

Course Requirements

ONLINE QUIZZES (2% each x 5 = 10% of final grade)

- The online quizzes will be made available on Courselink and will be opened on the **Wednesday** at 9:30 AM of the scheduled week and will remain open through **Monday** of the following week and will close at 8:00 AM.
- **IMPORTANT NOTE:** All the quizzes are to be completed during the allocated time of availability in Courselink. Missed quizzes CANNOT be made up and under no circumstances will the percent value of a missed quiz be shifted to any other quiz,

assignment, or exam. It is the student's responsibility to ensure that they have adequate computer/internet resources in place at the time they intend on completing the quiz.

Seminar Attendance (5% of final grade)

Attendance at the seminars is REQUIRED. Seminars are essential in learning how to develop a research plan and proposal. During the seminars, you will work on the following collaborative learning activities:

- Learn how to conduct a library search for journal articles
- Find out the structure of psychology journal articles
- Create research questions and hypotheses
- Learn how to write an introduction, methods, and results section for a research paper
- Present a summary of your research plan to the seminar group.

Plan for the 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 **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.

Research Proposal: Written (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 and Discussion are not required. Although the project will not to 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 must be followed. The maximum length is 10 pages not including the list of References.

Research Proposal: Oral Presentation (5%)

Students will deliver a **3-minute** summary (Maximum of 5 Powerpoint slides) of their research proposal to their seminar group. Scheduling will be determined by the seminar leader during the final three weeks of the course. Grading will be based on the demonstrated knowledge of the relevant literature, development of the hypothesis, clarity of methodology and expected outcomes, and professionalism in answering questions (2 minutes are allotted for questions).

Midterm Exam (30%)

The midterm exam (**Wednesday March 2**) may be comprised of multiple-choice and short answer questions. The midterm will cover material from chapters 1 to 7.

Respondus lockdown browser will be in effect.

Final Exam (30%)

The final exam (TBA) may be comprised of multiple-choice and short-answer questions. The questions will test material from chapters 8 to 13.

Respondus lockdown browser will be in effect.

Respondus LockDown Browser is a locked browser for taking quizzes in CourseLink. It will be required to take the midterms and final exam. It prevents you from printing and copying; using other operating software; using search engines (e.g., going to another URL); communicating via instant messaging; and it blocks non-web-related software (e.g., Adobe PDF, Microsoft Word).

Respondus Monitor is a companion application for LockDown Browser that uses webcam and video technology to ensure academic integrity during online exams. The software captures video during the exam and allows the instructor to review the video once the exam is completed.

In order to use Respondus LockDown Browser and Monitor, you must meet the following technical requirements so that you can take the practice test and midterm exam:

1. Operating Systems: Windows 10, 8, 7; Mac OS X 10.10 or higher.
2. Memory: Windows 2 GB RAM; Mac 512 MB RAM.
3. For Mac users: Safari must function properly on the computer.
4. Mac users must have Adobe Flash Player installed to Safari, even if a different browser is normally used.
5. Functioning webcam and microphone. The webcam and microphone can be built into your computer or can be the type that plugs in with a USB cable. (You will be required to do an environment scan of your room, so please ensure you can move your computer, laptop or webcam for this scan.)
6. A broadband Internet connection. It is recommended that you access the Internet via a wired connection.

If you have any concerns about meeting system requirements, contact CourseLink Support. They will work with you to find alternative solutions or make alternative arrangements.

- This course requires the use of Respondus LockDown Browser and Monitor (webcam) for proctoring within CourseLink. You must **download and install LockDown Browser and Monitor** to complete the practice test (if provided) and course exam(s). The purpose of the practice test is to ensure that Respondus LockDown Browser and Monitor is set up properly and that you are comfortable using the software.
- Respondus LockDown Browser is a locked browser connected to the Quizzes tool in CourseLink. It prevents you from printing and copying, using other operating software, using search engines (e.g., going to another URL), communicating via instant messaging, and it blocks non-web-related software (e.g., Adobe PDF, Microsoft Word).
- Respondus Monitor is a companion application for LockDown Browser that uses webcam and video technology to ensure academic integrity during online exams. The software captures video during the exam and allows the instructor to review the video once the exam is completed.

- In order to use Respondus LockDown Browser and Monitor, you must meet the **technical requirements**. Visit the Remote Learning website for guidance on **preparing your online exam environment**.
- If you have any concerns about meeting system requirements, contact **CourseLink Support**. They will work with you to find alternative solutions or make alternative arrangements.

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. You are encouraged to ask questions when you are struggling.

Late or missed deadlines:

Plan for research proposal and research proposal. Unless an extension has been granted on medical, psychological or compassionate grounds, late assignments will not be graded.

Midterm. If a student misses the midterm exam due to medical, psychological or compassionate reasons, then the midterm may be re-scheduled. 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).

Page Limits:

Marks will be docked for exceeding the page limit on literature review and research proposal. Papers that exceed the limit by more than ½ page will have the grade reduced by 10% of the assigned grade.

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

For information on current safety protocols, follow these links: <https://news.uoguelph.ca/return-to-campuses/how-u-of-g-is-preparing-for-your-safe-return/>

<https://news.uoguelph.ca/return-to-campuses/spaces/#ClassroomSpaces>

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives

Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings, changes in classroom protocols, and academic schedules. Any such changes will be announced via CourseLink and/or class email. This includes on-campus scheduling during the semester, mid-terms and final examination schedules. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

Illness

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g., final exam or major assignment).

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 [Student Accessibility Services](#) as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 54335 or email accessibility@uoguelph.ca or the [Student Accessibility Services Website](#).

Student Feedback Questionnaire

These questionnaires (formerly course evaluations) will be available to students during the last 2 weeks of the semester: March. 28th – April 08th. Students will receive an email directly from the Student Feedback Administration system which will include a direct link to the questionnaire for this course. During this time, when a student goes to login to Courselink, a reminder will pop-up when a task is available to complete.

[Student Feedback Questionnaire](#)

Drop date

The last date to drop one-semester courses, without academic penalty, is April 8, 2022. 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.

[Current Undergraduate Calendar](#)**Additional Course Information: Turnitin software**

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. 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.

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.