

PSYC*2360-02, Course Outline: Fall 2025

General Information

This course is offered using the Face-to-Face format. The course has set day, time, and location of 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 include research ethics, the scientific method, qualitative and quantitative measures, reliability and validity, complex research designs, and the reading and writing of journal articles.

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

- Identify, apply, and evaluate various research methods
- Critically evaluate scientific research
- Conduct a literature search and identify and summarize the relevant literature
- Generate research hypotheses; design research to test hypotheses
- Write a research proposal using APA formatting

Credit Weight: 0.50

Academic Department (or campus): Department of Psychology

Semester Offering: F25

Class Schedule and Location: Thursdays 5:30-6:50pm, ALEX 100

Instructor Information

Instructor Name: Sarah Carver, PhD

Instructor Email: scarve01@uoguelph.ca

Office location: MacKinnon Ext. 4015

Office hours: Email scarve01@uoguelph.ca to arrange Teams or in-person meeting

GTA Information

GTA Coordinator Name: Anna Kazatchkova

GTA Coordinator Email: akazatch@uoguelph.ca
GTA Coordinator office location and office hours: email to arrange meeting.

GTA Name (Seminar 01): Connor Hill
GTA Email: chill13@uoguelph.ca
GTA office location and office hours: email to arrange meeting

GTA Name (Seminar 02): Emily Thornton
GTA Email: ethorn04@uoguelph.ca
GTA office location and office hours: email to arrange meeting

GTA Name (Seminar 03): Leah Tackaberry-Giddens
GTA Email: tackabel@uoguelph.ca
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GTA Name (Seminar 04): Natalie Stearns
GTA Email: nstearns@uoguelph.ca
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GTA Name (Seminar 05): Matthew Rumas
GTA Email: mrumas@uoguelph.ca
GTA office location and office hours: email to arrange meeting

GTA Name (Seminar 06): Heather Collett
GTA Email: collett@uoguelph.ca
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GTA Name (Seminar 07): Jessica Kespe
GTA Email: jkespe@uoguelph.ca
GTA office location and office hours: email to arrange meeting

Course Content

Specific Learning Outcomes:

1. Critical Thinking
 - a. 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
 - b. Inquiry and Analysis

- Formulate research questions. Know how to access relevant sources.
- Test hypotheses with data
- Recognize the importance of supporting statements with evidence

c. Creative Problem Solving

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

2. Literacy

a. Methodological literacy

- Understand basic research methodologies (e.g., random assignment, random sampling; qualitative vs. quantitative methods)
- Evaluate the rigorousness of a study

b. Quantitative literacy

- Demonstrate the ability to interpret data

c. Visual literacy:

- Generate and interpret statistical graphs and tables

3. Communication

a. Reading Comprehension

- Understand complex theoretical and empirical psychological arguments

b. Listening skills

- Identify key points in lecture and summarize information concisely

c. Oral and Written Communication

- Present ideas in a logical order using clear examples and visual aids (i.e., tables and graphs) when appropriate
- Talk and write using the appropriate vocabulary and psychological jargon, presenting statistical results in the technical format following APA guidelines

4. Personal and Ethical Behaviour

a. Ethical issues in research

- Understand ethical principles in conducting research
- Advocate for ethical research processes

b. Personal organization/ time management

- Recognize the importance of planning for completion of tasks

- Prioritize multiple ongoing tasks and complete on time
- Demonstrate personal accountability and responsibility

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

1. Identify and describe key concepts of the scientific method, research design, and inferential and descriptive statistics. Apply these concepts when solving problems (Learning outcomes: 1a-c; 2a-c; 3a-b; 4b)
2. Describe the stages involved in scientific reasoning and specify the role and importance of quantification in the scientific method. (Learning outcomes: 1a-c; 2a-c; 3a-c; 4b)
3. Analyze a research question, identifying the key measured and manipulated variables. Indicate whether the study is a true experiment, a quasi-experiment, or correlational design and describe the strengths and weaknesses of each type of design. Propose a research design to test the research question. (Learning outcomes: 1a-c; 2a-b; 3a & c; 4a-b)
4. Identify the independent and dependent variables in a research study. Provide operational definitions of variables. (Learning outcomes: 1a-c; 2a-b)
5. Interpret information presented in graphical format (graphs) with an emphasis on statistical interactions. (Learning outcomes: 2c)
6. Explain hypothesis testing, indicating its purposes, the steps involved, and common errors in the process. Indicate the role of probability in hypothesis testing and inferential statistics. (Learning outcomes: 1a-c; 2a-b; 3a-c)

Lecture and Lab Content:

The table below lists the weekly lecture and lab topics, associated course readings, and assignment deadlines.

Week	Lecture Topic	Readings	Lab Topic	Deadlines
Week 1: Sept 2 nd – 5 th	Sept 4: Introduction	N/A	N/A	
Week 2: Sept 9 th – 12 th	Sept 11: Research Process	Chapters 1, 2	N/A	
Week 3: Sept 15 th – 19 th	Sept 18: Ethical Research Design	Chapters 3, 4	Lab 1: Research Planning	Quizzes 1, 2 Due: Sept 17
Week 4: Sept 22 nd – 26 th	Sept 25: Qualitative & Observational Research	Chapters 5, 6	Lab 2: Introduction	Quizzes 3, 4 Due: Sept 24
Week 5: Sept 29 th – Oct 3 rd	Oct 2: Correlational Research; Midterm Review	Chapter 7	Lab 3: Methods	Quizzes 5, 6 Due: Oct 1
Week 6: Oct 6 th – 10 th	Oct 9: Midterm	N/A	N/A	Quiz 7 Due: Oct 8

Week 7: Oct 13 th – 17 th	Oct 16: Two-Group Designs	Chapter 8	N/A	
Week 8: Oct 20 th – 24 th	Oct 23: Multi-Group Designs	Chapter 9	Lab 4: Academic Writing & APA	Quiz 8 Due: Oct 22 Proposal plan due in lab
Week 9: Oct 27 th – 31 st	Oct 30: Within-Group Designs	Chapter 10	Lab 5: Results	Quiz 9 Due: Oct 29
Week 10: Nov 3 rd – 7 th	Nov 6: Factorial Design	Chapter 11	Lab 6: Plan Feedback; Discussion	Quiz 10 Due: Nov 5
Week 11: Nov 10 th – 14 th	Nov 13: Mixed Design	Chapter 12	Lab 7: Rubric Review	Quiz 11 Due: Nov 12
Week 12: Nov 17 th – 21 st	Nov 20: Assessment	Chapter 13	Lab 8: Drop-in Q&A	Quiz 12 Due: Nov 19
Week 13: Nov 24 th – 28 th	Nov 27: Exam Review	N/A	N/A	Quiz 13 Due: Nov 26 Proposal Due Nov. 24th

Seminars:

Seminar 01: Mon 10:30-11:20am in ROZH 107

TA: Connor Hill (chill13)

Seminar 02: Fri 10:30-11:20am in ROZH 109TA: Emily Thornton (ethorn04)

Seminar 03: Wed 12:30-1:20pm in ROZH 107 TA: Leah Tackaberry-Giddens (tackabel)

Seminar 04: Wed 8:30-9:20am in ROZH 107 TA: Natalie Stearns (nstearns)

Seminar 05: Mon 1:30-2:20pm in CRSC 403 TA: Matthew Rumas (mrumas)

Seminar 06: Tues 8:30-9:20am in ROZH 107 TA: Heather Collett (collett)

Seminar 07: Weds 10:30-11:20am ROZH 108 TA: Jessica Kespe (jkespe)

Seminar Coordinator: Anna Kazatchkova (akazatch@uoguelph.ca)

Course Assignments and Tests:

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
Weekly online quizzes	Weekly quizzes due by 11:59 on Wednesday of the week following the corresponding lecture	10%	1a-c; 2a-c; 3a-c; 4a-b
Midterm exam	Thursday, October 9 5:30 – 6:50 pm Lectures 2-5; Chapters 1-7	25%	1a-c; 2a-b; 3a-c; 4b
Plan for research proposal	Due at the beginning of your lab the week of October 20 th	5%	1a-c; 2a-c; 3a-b; 4b
Research proposal	Monday, November 24	20%	1a-c; 2a-c; 3a-c; 4a-b
Final Exam	Tuesday, December 2 8:30 – 10:30am Cumulative with priority to Lectures 7-12 & Chapters 8-13	35%	1a-c; 2a-c; 3a-c; 4a-b
Seminar Participation	Ongoing (Labs 1-7)	5%	1a-c; 2a-c; 3a-c; 4a-b

Final examination date and time: Tuesday, December 2nd, 8:30 – 10:30am (Location TBD)

Final exam weighting: 35%

Course Resources

Required Texts:

Lewandowski, G. W., Ciarocco, N. J., & Strohmetz, D. B. (2023). *Discovering the Scientist Within: Research Methods in Psychology*. Third Edition. Worth Publishers, New York.

"Achieve for Discovering the Scientist Within (1-Term Online)" (includes the ebook downloadable for 4 years + iClicker + study tools/assessment)

9781319454883

Cost: \$109.99

"Loose-leaf Version for Discovering the Scientist Within 3e & Achieve for Discovering the Scientist Within (1-Term Access)" (includes the ebook downloadable for 4 years + iClicker)

9781319504243

Cost: \$159.99

Book Available at Campus Bookstore: The cost of the required text for this course, *Discovering the Scientist Within*, is \$109.99 for the e-book and \$159.99 for the loose-leaf version at the campus bookstore. I recommend purchasing a new copy of the textbook (not used) so that you are able to complete the required assignments through the Achieve software. When you purchase a new copy of the textbook, you will receive an access code. You may also purchase a standalone access code that provides access to an e-book version of the textbook. When you register, use your name as it appears on the University classlist.

Other Resources:

Courselink Website. Summary slides for the assigned chapter readings will be provided.

Achieve software (included with a new text or purchased separately) provides an e-book and learning resources (Learning Curve, Quizzes).

About Achieve PowerPoint slides are available under Content on the course homepage.

The Achieve Course ID is: n8hy95

Course URL: <https://achieve.macmillanlearning.com/courses/n8hy95>

Course Requirements

Achieve Quizzes (10%)

Once you have read the assigned chapter and summary slides, I recommend completing the Learning Curve activity prior to taking the quiz. This is an adaptive learning tool designed with varying question difficulty to help prepare you for the chapter quiz.

Once you have achieved mastery on Learning Curve, you should attempt the Quiz. Note that Learning Curve grades do not count towards your quiz grade, only the chapter quizzes do. Your best 10 quizzes will be counted, and your 3 lowest quizzes will be dropped. Quizzes that are not completed will receive a grade of 0.

The deadline for completing the weekly quiz assignments for each chapter is 11:59 pm on the Wednesday following the corresponding lecture.

The Quiz grades will be available in the Achieve gradebook. The grades will be transferred to the Courselink gradebook during the first week of the Final Examination period.

Seminars

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 journal articles in psychology
- Generate research questions and hypotheses
- Learn how to write an introduction, methods, and results section for a research paper

Plan for Research Proposal (5%)

Working individually, students will compose a report outlining their research proposal plan. The report should first specify the general topic of interest and a brief summary of relevant previous research. All variables of interest should be identified and operationally defined, and hypotheses should be explicitly stated. In the Methods section, briefly describe your proposed sample, recruitment procedures, materials, and procedural operations. Any work cited in the introduction and method sections should be listed under References using APA formatting. The maximum length is 3 pages. References are not included in the page count.

Research Proposal (20%)

Working individually, students will prepare a research proposal. The proposal should include a Title page, an Introduction, a Method section, a Results section, and a Reference section. An Abstract and Discussion are not required.

The Introduction should include a literature review with a minimum of three previous articles discussed in detail. These articles should be empirical studies with clear research questions and hypotheses that are relevant to your research topic. You may cite review articles and/or book chapters in your proposal, but these do not count towards the required three articles. Articles focused on scale creation or validation related to your research materials should be cited in the methods section and do not count towards the three articles. Be sure to clearly identify and operationally define your variables of interest and explicitly state your hypothesis.

The Methods should describe your proposed sample, recruitment procedures, materials, and design (e.g., experimental design; correlation design), and procedural operations. This section should be written in future tense (e.g., “I plan to recruit...” NOT “I recruited...”).

The Results should state the proposed plan for analysis. Your plan for analysis should align with the stated hypotheses (i.e., the plan for analysis should provide a way to test the hypotheses if this research was carried out). Based on your plan for analysis, please state what your expected results would be (may be accompanied by tables or figures).

All sources used to support your arguments in the paper should be cited using in-text citations and referenced in the references page. Please use APA formatting. The maximum length is 10 pages. Title page and references are not included in the page count.

Seminar Participation (5%)

Students are expected to attend, and actively participate, in their seminars sessions. These classes are meant to be interactive and participative, and therefore participation will be graded in each lab by the seminar TA. Note that only Labs 1-7 will be graded for participation; Lab 8 is a drop-in session and therefore no participation marks will be given this week.

Midterm (25%)

The midterm exam (Oct. 9) will comprise of 50 multiple-choice questions based on both lecture material (lectures 2-5) and course readings (chapters 1-7).

Final Exam (35%)

The final exam (Dec. 2) will be cumulative and will comprise of 50 multiple-choice questions based on both lecture material (lectures 2-12) and course readings (chapters 1-13). Most of the questions (40/50) will cover material from Lectures 7-12 and chapters 8-13.

Attendance

Regular engagement with the weekly readings and assignments is strongly recommended. The goal of the weekly lectures is to communicate key concepts based on the readings in an accessible way. Students are expected to attend seminars.

Time Management

Effective time management is critical. To succeed in this course, it is essential that you keep up with the readings, the weekly learning curve, and quizzes. If at any point you are struggling with the course material, you are encouraged to ask questions in lecture and lab and attend Sarah Carver's office hours.

Course Policies

Grading Policies

Plan for research proposal and research proposal. Unless an extension has been granted on medical, psychological, or compassionate grounds, late assignments will receive a penalty of 10% per day up to five days, after which time they will receive a grade of 0. Requests for extensions based on medical, psychological, or compassionate grounds should be made to Sarah Carver. When making your request you must cc your seminar TA and the seminar coordinator (Anna Kazatchkova; akazatch@uoguelph.ca)

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 the assignments. 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.

University Policies

Disclaimer:

Please note that a revision of the format of course offerings, changes in classroom protocols, and academic schedules is occasionally required. 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.

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](#)

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).

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. 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 Friday November 28, 2025. 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

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.