

PSYC*6380, Course Outline: Winter 2026

General Information

Some courses are offered virtually and some face to face. This course is offered using the Alternate-Delivery-Synchronous (AD-S) format. Lectures are delivered virtually at assigned days and times.

Course Title: Psychological Applications of Multivariate Analysis

Course Description:

This course starts with bivariate regression as a basis for building a deep understanding of multiple regression (a frequently used multivariate technique). Regression topics include plotting regressions, conducting ANOVA as a regression, comparing regression models, and regression assumptions. Emphasis is placed on understanding evaluating whether regression assumptions are violated and consequences of assumption violations. Assumption violations are used as means understanding the basis for multilevel regression. Time permitting, we also introduce logistic regression.

Credit Weight: 0.50

Academic Department (or campus): Psychology

Semester Offering: W26

Class Schedule and Location: Tuesday 2:30pm Zoom.

Instructor Information

Instructor Name: David Stanley, PhD

Instructor Email: dstanley@uoguelph.ca

Office location and office hours: TBA, Zoom classroom link.

GTA Information

GTA Name: Rahul Patel

GTA Email: rpatel40@uoguelph.ca

GTA office location and office hours: TBA, Zoom different Zoom link

Course Content

Specific Learning Outcomes:

1. Literacy. Facet 2. Methodological literacy: the ability to understand, evaluate, and design appropriate methodologies for rigorous psychological science
2. Literacy. Facet 3. Quantitative literacy: includes numeracy, and competence in working with numerical data
3. Literacy. Facet 4. Technological literacy: the ability to select and use appropriate technology
4. Communication. Facet 3. Reading comprehension: the understanding of theoretical and empirical literature in Psychology.
5. Communication. Facet 2. Written communication: the ability to express one's ideas and summarize theory and research through a variety of writing styles (e.g., American Psychological Association style).

Lecture Content:

1. Simple Linear Regression Models
2. Multiple Linear Regression Models
3. The ANOVA Table and Goodness-of-Fit Statistics
4. Comparing Linear Regression Models
5. Indicator Variables in Linear Regression Models
6. Assumptions
7. Model Specification
8. Influential Observations: Leverage Points and Outliers
9. Multilevel Linear Regression Models

Course Assignments and Tests:

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
Assignment 1. MR-weights	January 20	5%	1, 2, 3, 4, 5
Assignment 2. MR-proportions	January 27	5%	1, 2, 3, 4, 5
Assignment 3. MR-integration	February 3	5%	1, 2, 3, 4, 5
Assignment 4. MR-categorical	February 24	5%	1, 2, 3, 4, 5
Assignment 5	March 10	5%	1, 2, 3, 4, 5
Assignment 6	March 17	5%	1, 2, 3, 4, 5
Assignment 7	March 24	5%	1, 2, 3, 4, 5
Assignment 8	March 31	5%	1, 2, 3, 4, 5
Midterm	February 10	30%	1, 2, 3, 4, 5
Final Exam	April 14, 2:30pm	35%	1, 2, 3, 4, 5

Additional Notes (if required):

Best 7 of 8 Assignments will be used. This is a form of universal accommodation to account for illness, schedule conflicts, conferences, and other personal circumstances.

The final exam (35%) is cumulative and covers all course materials and readings.

Final examination date and time: Monday April 14, 2:30pm (online via Courselink)

Final exam weighting: 35% of final grade

[Examination Regulations](#)

Course Resources

Required Texts:

Hoffmann, J. P. (2021). Linear Regression Models: Applications in R. CRC Press.

[\[link\]](#) \$125

Huang, F.L. (2022). Practical Multilevel Modeling Using R

[\[link\]](#) \$104

Other Resources:

[PSYC 6380 Class Website](#)

Course Policies

Course Concerns

Concerns about any aspect of the course should be raised during office hours – not via email. These issues are too important to use email to address them.

Grading Policies

Where a student is of the belief that an assignment has not been accurately graded, they are to pursue a 2-step course policy: 1) as soon as possible, meet with the TA that graded the assignment, and if a student remains dis-satisfied, 2) they can request from the instructor that the assignment is regraded. Note that the student will be required to accept the re-grade, whether it be higher or lower than the original grade.

Be sure to follow assignment/quiz directions for submissions. Especially around reporting the right number of decimal places for numbers. Assignments are bespoke and marking is partly automated. Remarking requests will not be granted if the grade loss is due to a failure to follow assignment directions (e.g., reporting the right number of decimals etc.).

Please be sure to consult [Graduate Grade interpretation](#). In particular, I draw your attention to the fact a GRADUATE grade in the 80 to 89 range is described as “Very Good to Excellent. The student demonstrated a very good understanding of the material at a level of performance warranting scholarship consideration.” Correspondingly, a GRADUATE grade in the 90 and above range is described as “Outstanding. The student demonstrated a mastery of the course material at a level of performance exceeding that of most scholarship students and warranting consideration for a graduation award.”

Course Policy on Group Work:

All assignments must be completed on an INDIVIDUAL basis. Group work is not permitted for any course components – unless specifically noted in the assignment.

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 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.

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:

[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 [Graduate Calendar](#):

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 Monday April 6, 2026. 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 Graduate Calendar](#)