

Faculty of Health
Department of Psychology
PSYC 3010: INTERMEDIATE RESEARCH METHODS
Monday from 11:30am to 14:30pm in DB 0013
Fall 2022/2023

This course will be imparted in-person at the Keele Campus of York University (DB 0013). A good part of the course will consist in group work, along with lecture-like overviews over the relevant parts of the scientific process. Slides and materials for the latter are made available online (on eClass) but attendance is very important given the nature of this class.

Instructor Information

Instructor: Bjoern Joerges [he/him]
Office: SHR 1018 // Zoom
Office Hours: By Appointment
Email: bjoerges@yorku.ca

Course Prerequisite(s): Course prerequisites are strictly enforced

- HH/PSYC 1010 6.00 (Introduction to Psychology), with a minimum grade of C.
- HH/PSYC 2020 6.00 (Statistical Methods I and II) or HH/PSYC 2021 3.00 (Statistical Methods I)
- HH/PSYC 2030 3.00 (Introduction to Research Methods)
- Completed at least 54 earned credits

Course Credit Exclusions

Please refer to [York Courses Website](#) for a listing of any course credit exclusions.

Course website: [eClass](#)

Course Description

Welcome to Intermediate Research Methods! We will meet on Mondays from 11:30am-14:30pm at DB 0013. The main goal of this course for you to develop full research projects in small groups of 4-6 persons. During class time, I will provide refreshers on each part of conducting a research project such as literature research, hypothesis generation, operationalization of variables, programming of the stimulus, writing introduction and methods sections, data analysis and visualization, writing results and discussion sections and abstracts, and making scientific posters. The remainder of each class will be dedicated to group work, while I will be available to answer questions that may arise. For some classes, you will have to prepare at home by reading papers or watching videos (see below in the course outline). Please join the class Discord (<https://discord.gg/7gkcFqUU8e>) to discuss matters asynchronously with your group.

Program Learning Outcomes

Upon completion of this course, students should be able to:

1. Upon completion of this course, you should be able to:

2. Explain and critique psychological methodologies across sub-disciplines.
3. Analyse and interpret results from simple psychological studies.
4. Generate testable hypotheses in psychology.
5. Express in written form psychological findings using APA style.

Required Text

- Any undergraduate textbook on research design and methods, e.g.:
 - Jhangiani, R. S., Chiang, I.-C. A., Cuttler, C., & Leighton, D. C. (2019). *Research Methods in Psychology*. Surrey, BC: Kwantlen Polytechnic University.
The text book can be downloaded (for free and legally) here:
<https://open.umn.edu/opentextbooks/textbooks/75>
- Original journal articles:
 - Gresch, D., Boetcher, S., van Ede, F., & Nobre, A. (2021). Shielding working-memory representations from temporally predictable external interference. *Cognition*, 217(105915), 1–13.
 - Gresch, D., Boettcher, S. E. P., Nobre, A. C., & van Ede, F. (2022). Consequences of predictable temporal structure in multi-task situations. *Cognition*, 225(May), 105156. <https://doi.org/10.1016/j.cognition.2022.105156>
 - Kim, J. J. J., & Harris, L. R. (2022). Can People Infer Distance in a 2D Scene Using the Visual Size and Position of an Object? *Vision*, 6(2), 1–21. <https://doi.org/10.3390/vision6020025>
 - Martha, W., & Vest, N. A. (2021). The Mental Representation of Integers: Further Evidence for the Negative Number Line as a Reflection of the Natural Number Line. *Proceedings of the Annual Meeting of the Cognitive Science*, 43(43), 1670–1676.
 - Lawrence, R. K., & Pratt, J. (2022). Saliency matters: Distractors may, or may not, speed target-absent searches. *Attention, Perception, and Psychophysics*, 84(1), 89–100. <https://doi.org/10.3758/s13414-021-02406-x>
 - Mikula, L. (2022). Rapid motor adaptation to bounce perturbations in online Pong game is independent from the visual tilt of the bouncing surface. *BioRxiv*.
 - Özkan, M., Anstis, S., Hart, B. M. T., Wexler, M., & Cavanagh, P. (2021). Paradoxical stabilization of relative position in moving frames. *Proceedings of the National Academy of Sciences of the United States of America*, 118(25), 1–8. <https://doi.org/10.1073/pnas.2102167118>
 - Whitaker, M. M., Hansen, R. C., Creem-Regehr, S. H., & Stefanucci, J. K. (2022). The relationship between space and time perception: A registered replication of Casasanto and Boroditsky (2008). *Attention, Perception, and Psychophysics*, 84(2), 347–351. <https://doi.org/10.3758/s13414-021-02420-z>
- Supplemental materials assigned by the instructor:
 - Week 1: TCSP course
 - Week 4: PsychoPy tutorials ([Part 1](#) and [Part 2](#))
 - Week 6:
 - [Statistical Inference via Data Science](#)

- [Brown, V. A. \(2021\). An Introduction to Linear Mixed-Effects Modeling in R. *Advances in Methods and Practices in Psychological Science*, 4\(1\), 1–19.](#)
- Week 7: [Bennett, S. J., Baures, R., Hecht, H., & Benguigui, N. \(2010\). Eye movements influence estimation of time-to-contact in prediction motion. *Experimental Brain Research*, 206\(4\), 399–407. <https://doi.org/10.1007/s00221-010-2416-y>](#)
- Week 8: [APA Style Guide](#)
- Week 11: [Jörges, B., & López-Moliner, J. \(2019\). Earth-Gravity Congruent Motion Facilitates Ocular Control for Pursuit of Parabolic Trajectories. *Scientific Reports*, 9\(1\), 1–13. <https://doi.org/10.1038/s41598-019-50512-6>](#)

Course Requirements and Assessment:

Assessment	Date of Evaluation (if known)	Weighting
Presentation on state-of-the-art in the literature (group)	Sept. 26	10%
Preregistration (group)	Nov. 14	50%
Poster (group)	Nov. 28	10%
Final report (individual)	Dec. 15	30%
Total		100%

Description of Assignments

The overall grade in the class will consist of four parts: a presentation on the state-of-the-art in the chosen research area and the hypothesis to be tested, a preregistration, a poster presentation of the results, and a final report. For all parts of the project except the final report, the grade will be given to the group as a whole.

The presentation will take about 15-20 minutes and should condense the state of the art from the chosen research article along with 3-4 others. It should further lay out the hypothesis as well as the rationale for why the group chose this hypothesis. While all group members are expected to contribute to the presentation, it may be given either by all group members together or by a delegate of the group.

The Preregistration contains a write-up of the presentation as introduction to the rationale behind the proposed experiment and a methods section. Again, all group members are expected to contribute to the preregistration.

The Poster presentation will be given once data collection is complete. As for the first presentation, the poster is created by all members of the group together, while one or all members of the group can present the poster in front of the class.

The final report consists of the preregistration, a results section and a discussion of the results in the context of the literature.

Class Format and Attendance Policy

Attendance will not be taken formally. However, some of the group work will be conducted during class hours, and repeated absences may impact how your group evaluates your contribution to the project. If the group evaluations for a group members are low, I will work with the group to improve the team experience. If you can't attend a class for whatever reason, make sure to be in touch with your group ahead of and after the class to make sure you still contribute to that week's group work.

Grading as per Senate Policy

The grading scheme for the course conforms to the 9-point grading system used in undergraduate programs at York (e.g., A+ = 9, A = 8, B+ = 7, C+ = 5, etc.). Assignments and tests* will bear either a letter grade designation or a corresponding number grade (e.g. A+ = 90 to 100, A = 80 to 89, B+ = 75 to 79, etc.)

The following allows for conversion between letter-grades and percentages:

<u>Percentage</u>	<u>Grade</u>	<u>Description</u>
90 - 100	A+	Exceptional
80 - 89	A	Excellent
75 - 79	B+	Very Good
70 - 74	B	Good
65 - 69	C+	Competent
60 - 64	C	Fairly Competent
55 - 59	D+	Passing
50 - 54	D	Marginally Passing
40 - 49	E	Marginally Failing
0 - 39	F	Failing

For a full description of York grading system see the York University Undergraduate Calendar - [Grading Scheme for 2019-20](#)

Missed Tests/Midterm Exams/Late Assignments:

For any missed tests, students MUST complete the following online form which will be received and reviewed in the Psychology undergraduate office.

[HH PSYC: Missed Tests/Exams Form](#). **Failure to complete the form within 48 hours of the original deadline will result in a grade of zero for the missed tests.**

In addition, to the online form, students with a documented reason for a missed test MUST submit official documentation (e.g. [Attending Physician Statement](#)).

Late Assignments. Assignments received after the deadline will be given a grade of 0. There are no exceptions (e.g., enrolling late).

Missed Tests. Students who miss a test due to illness or severe distress must e-mail the instructor and TA within 24 hours, and follow the Faculty of Health guidelines for missed

tests or examination. Exams missed on the grounds of medical circumstances must be supported by an Attending Physician’s Statement. Also acceptable is a statement by a psychologist or counselor. Students are not expected to disclose the nature of the illness, but the document must specify (1) the date of consultation, (2) contact information for the health provider, and (3) a statement that the student would not have been able to attend class (or write a test/exam) during the relevant period of time. For other types of emergencies, appropriate official documentation must also be provided (e.g., death certificate, obituary notice, automobile accident report; notes from parents and relatives will not be accepted). **The documentation must be dated on the same day of the exam/test or earlier, or it will not be accepted.** This documentation should be placed in the instructor’s mailbox (main floor of BSB) and sent as a PDF/JPG via e-mail. **Failure to provide appropriate documentation for a missed test will result in a grade of 0.**

If this missed test is prior to the drop date, regardless of reason, the student has waived the right to have a specific percentage of graded feedback available to them prior to the drop date.

If appropriate documentation is provided, then the other tests may be re-weighted or the student may have to write a make-up test or complete a make-up assignment. Please note that the make-up test or assignment may not resemble the original test, but instead be a series of essay questions or a take-home essay assignment.

Add/Drop Deadlines

For a list of all important dates please refer to: [Fall/Winter 2022-23 - Important Dates](#)

	FALL (F)	YEAR (Y)	WINTER (W)
Last date to add a course without permission of instructor (also see Financial Deadlines)	Sept. 20	Sept. 20	Jan. 22
Last date to add a course with permission of instructor (also see Financial Deadlines)	Oct. 4	Oct. 25	Feb. 6
Drop deadline: Last date to drop a course without receiving a grade (also see Financial Deadlines)	Nov. 11	Feb. 10	March 17
Course Withdrawal Period (withdraw from a course and receive a grade of “W” on transcript – see note below)	Nov. 13 - Dec. 7	Feb. 11 - Apr. 11	March 18 - Apr. 11

***Note:** *You may withdraw from a course using the registration and enrolment system after the drop deadline until the last day of class for the term associated with the course. When you withdraw from a course, the course remains on your transcript without a grade and is notated as "W". The withdrawal will not affect your grade point average or count towards the credits required for your degree.*

Academic Integrity for Students

York University takes academic integrity very seriously; please familiarize yourself with [Information about the Senate Policy on Academic Honesty](#).

It is recommended that you review Academic Integrity information [SPARK Academic Integrity modules](#). These modules explain principles of academic honesty.

Academic Accommodation for Students with Disabilities

While all individuals are expected to satisfy the requirements of their program of study and to aspire to do so at a level of excellence, the university recognizes that persons with disabilities may require reasonable accommodation to enable them to do so. The [York University Accessibility Hub](#) is your online stop for accessibility on campus. The [Accessibility Hub](#) provides tools, assistance and resources. Policy Statement.

Policy: York University shall make reasonable and appropriate accommodations and adaptations in order to promote the ability of students with disabilities to fulfill the academic requirements of their programs.

The nature and extent of accommodations shall be consistent with and supportive of the integrity of the curriculum and of the academic standards of programs or courses. Provided that students have given sufficient notice about their accommodation needs, instructors shall take reasonable steps to accommodate these needs in a manner consistent with the guidelines established hereunder.

For Further Information please refer to: [York university academic accommodation for students with disabilities policy](#).

Course Materials Copyright Information

These course materials (including pre-recorded lectures) are designed for use as part of the PSYC 3010 course at York University and are the property of the instructor unless otherwise stated. Third party copyrighted materials (such as book chapters, journal articles, music, videos, etc.) have either been licensed for use in this course or fall under an exception or limitation in Canadian Copyright law.

Copying this material for distribution (e.g. uploading material to a commercial thirdparty website) may lead to a violation of Copyright law. [Intellectual Property Rights Statement](#).

Course Schedule (Tentative)

Date	Lecture/Reading	Assignment
Sept. 12 Week 1	Introduction of the course Presentation of papers to be used in class Introduction on literature search Reading scientific articles	

Sept. 19 Week 2	Work session: literature search, reading articles, prepare presentations	Finish TCSP Ethics course
Sept. 26 Week 3	Presentations on state-of-the-art & hypothesis to be investigated Ethics in Research	Deliverable: Presentation on state-of-the-art & hypothesis to investigate
Oct. 03 Week 4	Programming in PsychoPy Work session: load PsychoPy project from chosen paper, implement chosen manipulation in PsychoPy	Set up PsychoPy Watch introduction to PsychoPy (Part 1 and Part 2) Ethics form Peer Assessment I
Oct. 10	READING WEEK	
Oct.17 Week 5	Pavlovia – running online PsychoPy experiments Work session: implement chosen manipulation in PsychoPy	
Oct. 24 Week 6	Data Analysis and Data Visualization in R	Collect pilot data from group Set up R and RStudio Read Chapter 1 of Statistical Inference via Data Science Read Brown's Introduction to Linear Mixed Modelling in R
Oct. 31 Week 7	Work session: analyze and visualize pilot data in R Open Science How to write pre-registrations (Introduction and Methods sections of scientific papers)	Install Zotero
Nov. 07 Week 8	Work session: write pre-registration	Skim APA style guide
Nov. 14 Week 9	Data collection Work session: do each other's experiments	Deliverable: Pre-registration Peer Assessment II
Nov. 21 Week 10	How to write Results and Discussion Presenting Research at Conferences Work session: posters, results and discussion	Finish participation in all experiments

Nov. 28 Week 11	Poster presentations and feedback Work session: writing results and discussion	Deliverable: Poster Presentation
Dec. 05 Week 12	Work session: writing results and discussion Final paper due: Dec. 15	

Adjustments to this course schedule may be made at any time. For the most up-to-date version of the syllabus, please refer to the course website on eClass.