COURSE OUTLINE

PSYCHOLOGY 277 (001): Behavioural and Neuroscientific Research Methods
Term 1, 2019W

Instructor: **Dr. Ipek Oruc**   *office:* Kenny 2524   *phone:* 604-675-8866
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Textbook: Methods in Behavioural Research, 2nd Canadian edition (2016) by P.C. Cozby and C.D. Rawn (2 copies on 2-hour reserve in Koerner Library; previous editions are not suitable)

Website: *canvas.ubc.ca* (course syllabus, lecture slides, lab assignments, discussion forum, and grades)

Lectures: TTh   11:00 am – 12:20 pm   CHEM D200
Labs: *L01* Th   2:00 pm – 4:00 pm   West Mall Swing Space 405
      L02 Th   4:00 pm – 6:00 pm   West Mall Swing Space 405

Office Hours: TAs – Monday   11:00 – 12:00   Kenny 3606
                  Wednesday   10:00 – 11:00   Kenny 3504
                  Thursday   13:00 – 13:50   Kenny 2524
                  Friday   12:00 – 13:00   Kenny 3504

                  Dr. Oruc – Tuesday   1:00 – 2:00   Kenny 2524

We are also easily reached through the discussion forum for this course on Canvas. We will check this forum regularly; all questions about lecture material, assignments and exams should be posted here.

Grades

Midterm Exams	40% (20% x 2)
Final Exam	35%
Lab activities	5%
Research Project	20%
total	100%

Expect the end of year grades to have a mean of 75% and a standard deviation of 11%. **Scaling** is likely to be used in order to comply with these norms; grades may be scaled up or down as necessary by the professor or department.

Students should retain a copy of all submitted assignments because we will need to keep the marked assignments.

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Readings and Lectures: Regular attendance at lectures is expected. You are responsible for reading the material in the textbook BEFORE the lecture in the order in which it appears on the schedule. Some of the material covered in class is not in the textbook, and some of the material in the textbook will not be covered in class. When it comes to the exams, you are responsible for ALL material covered in class and ALL material in the textbook including figures, definitions and summaries.

Exams: Each of the exams will consist of multiple choice and short answer questions. The two midterm exams are not cumulative. Each midterm exam will cover only material that you have not been tested on previously. The final exam is cumulative and will cover the entire course material. Exams will not be returned to students, although they may be viewed during the TAs' office hours within posted dates. Any requests for remarking must be made in writing to Dr. Oruc. Grades will be posted on *Canvas* as soon as they are available. Midterm exam answers will be reviewed in class.

Missed Midterm Exams: If you miss an exam for a valid reason (see UBC Vancouver Senate's Academic Concession Policy V-135) you must contact Dr. Oruc **within 72 hours** of the exam date, and submit a request for academic concession. For a missed midterm, the weight will be transferred to the other midterm and the final exam. However, if a student fails to present to their instructor a self-declaration within 72 hours of the missed exam their mark for this exam will be 0. Supplemental exams to improve your grade are not offered in the Department of Psychology.

Accommodations: Please let Dr. Oruc know as soon as possible if you will be seeking accommodation through Access and Diversity or if you have religious obligations that will conflict with this course in any way. Students who plan to be absent for varsity athletics, family obligations or similar commitments cannot assume they will be accommodated and should discuss their commitments with Dr. Oruc before the withdrawal date (September 17).

Psychology Department's Position on Academic Misconduct: The UBC Calendar defines cheating as: "*dishonest or attempted dishonest conduct at tests or examinations, in which use is made of books, notes, diagrams or other aids excluded by the examiner. It includes communicating with others, copying from the work of others and purposely exposing information to other students who are taking the test or exam*." Plagiarism is: "*the presentation or submission of the work of another person, without citation or credits, as the student's own work*".
Cheating, plagiarism, and other forms of academic misconduct are very serious concerns of the University, and the Department of Psychology has taken steps to alleviate them. In the first place, the Department has implemented software that can reliably detect cheating on multiple-choice exams by analyzing the patterns of students' responses. In addition, the Department subscribes to *TurnItIn*--a service designed to detect and deter plagiarism. All materials (term papers, lab reports, etc.) that students submit for grading will be scanned and compared to over 4.5 billion pages of content located on the Internet or in TurnItIn's own proprietary databases. The results of these comparisons are compiled into customized "Originality Reports" containing several, sensitive measures of plagiarism; instructors receive copies of these reports for every student in their class. In all cases of suspected academic misconduct, the parties involved will be pursued to the fullest extent dictated by the guidelines of the University. Strong evidence of cheating or plagiarism may result in a zero credit for the work in question. According to the University Act (section 61), the President of UBC has the right to impose harsher penalties including (but not limited to) a failing grade for the course, suspension from the University, cancellation of scholarships, or a notation added to a student's transcript. *All graded work in this course, unless otherwise specified, is to be original work done independently by individuals.*

For details on pertinent University policies and procedures, please see the Academic Regulations section of the UBC Calendar (*students.ubc.ca/calendar*).

Academic conduct in exams: After time has been called no more markings can be made on the scantron sheets or the exam papers, and students have to hand in their complete exam papers. Failure to comply with this policy (i.e., continuing to work after time has been called) may result in a zero on the exam and a report of misconduct.

Students wishing to visit the washroom during the exam may do so only after checking out with one of the invigilators, and may not take their cell phone or other material to the bathroom. No bathroom visits can be allowed after the first person has handed in their exam, and during the last 20 minutes of the exam, to avoid disruption. Students will be accompanied to the bathroom by one of the invigilators; if the time of absence seems unreasonable (e.g., >5 minutes), the invigilator may request that the student leaves the bathroom. Failure to comply may result in a zero on the exam and a report of misconduct.

University Policies
UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available on **the UBC Senate website.**

Why take this course?
In addition to gaining a conceptual understanding and procedural knowledge of behavioural and neuroscientific research design and techniques, and statistical reasoning you will learn to:
- collect information supported by evidence, and analyze data
- recognize when previous knowledge has to be re-evaluated as a result of new discoveries
- fit newly gained information into a growing framework of understanding
- communicate effectively in writing and orally in a manner acceptable to the audience
- collaborate effectively with other contributing participants in group work
- manage projects and course work together with other commitments

Acknowledgment
UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the xwməθkwəy̓əm (Musqueam) people. The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on in their culture, history, and traditions from one generation to the next on this site.

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Lecture Schedule (Tue & Thurs 11-12:30)

Week	Reading	Topic	Date
1	Chapter 1	Introduction	Sep 5
2	Chapter 2	Hypotheses and Falsifiability	Sep 10
2	Chapter 4	Operational Definitions, Variables	Sep 12
3	Chapter 4/5	Measurement Concepts	Sep 17
3	Chapter 4/5	Research Design Fundamentals	Sep 19
4	Chapter 6	Observational Methods	Sep 24
4	Chapter 7	Survey Research	Sep 26
5	Chapter 8/9	Experimental Design	Oct 1
5	Chapter 10	Complex Experimental Designs **sign up for group research project**	Oct 3
6	Chapter 12	Statistical reasoning Descriptive Statistics Pt. 1	Oct 8
6	Chapter 12	Statistical reasoning Descriptive Statistics Pt. 2	Oct 10
7		*****Midterm Exam 1*****	Oct 15
7		Behavioural and Neuroscientific Research in Action	Oct 17
8	Chapter 12	Statistical reasoning Descriptive statistics Pt. 3	Oct 22
8	Chapter 12	Statistical reasoning Descriptive statistics Pt. 4	Oct 24
9	Chapter 13	Statistical reasoning: Basic inferential statistics Pt 1	Oct 29
9	Chapter 13	Statistical reasoning: Basic inferential statistics Pt 2	Oct 31
10	Chapter 13	Statistical reasoning: Basic inferential statistics Pt 3	Nov 5
10	Chapter 13	Statistical reasoning: Basic inferential statistics Pt 4	Nov 7
11		*****Midterm Exam 2*****	Nov 12
11		Behavioural and Neuroscientific Research in Action	Nov 14
12	Chapter 3/14	Ethical issues and replication crisis in Behavioural and Neuroscientific Research Post-course assessment	Nov 19

group presentations start (4%)

12	group presentations (1-6)	Nov 21
13	group presentations (4.5 and 8-12)	Nov 26
13	group presentations (13-17)	Nov 28
	Post-assessment review	
	Final Exam Q/A	

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Lab Schedule (Thursday 2-4pm or 4-6pm)

Lab TAs:

	Todd Kamensek	**Raymond MacNeil**
	office: TBA	*office:* TBA

Week	Topic	Date
1	Overview and Organization of the Lab Sessions	Sep 5
2	Scientific Method, Operational Definitions	Sep 12
3	Confounding variables, Falsifiability	Sep 19
4	Qualitative Research	Sep 26
5	Project Preparation **sign up for research group project**	Oct 3
6	**develop and submit data collection protocol for group project (2%)**	Oct 10
7	Central tendency **finalize data collection protocol.** Get TA feedback on data collection protocol and commence data collection based on finalized protocol.	Oct 17
8	Frequency distributions (CLT) **merge preliminary group project data**. Discuss and resolve obstacles encountered during data collection. **graph preliminary group data**. Experiment with different plots, discuss best options.	Oct 24
9	Sampling distributions Hypothesis testing Graph final data. **submit final data sets and graphs (2%)**	Oct 31
10	Type I and II errors Statistical power Effect sizes, p values **finalize and submit statistical analysis of your data (2%)**	Nov 7
11	Presentation prep (Groups 1-8, including Group 4.5)	Nov 14
12	Presentation prep (Groups 9-17)	Nov 21
13	**submit project reports (10%)**	Nov 28

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Guidelines for Group Projects

1. Choose a research group:
This will be done through *Canvas* ("Research Project Groups" tab under "People") starting **Thursday October 3.** Students will assign themselves to groups (6 students/ group) according to the topics listed on Canvas (under "Announcements" on October 3).

2. Develop a data collection protocol:
This will be done during the lab session on **Thursday October 10.**
Each group will develop a single data collection protocol on their assigned research project. *A group data collection protocol is due at the end of the lab session by uploading to* Canvas. Follow the content instructions for the individual proposals. You will be receive feedback on your protocols and finalize them during the lab session on October 17.

3. Collect data:
This will be done outside of class and lab time between October 17 and **October 31**. Each group member will contribute to data collection. Make sure to collect part of your data before the lab session on **October 24** for preliminary analyses.

4. Graph your data and submit final datasets:
This will be done during the lab session on **Thursday October 31.**
Each group will combine their individual data sets. *Each group must hand in data graphs, final datasets by uploading on Canvas.*

5. Perform statistical analysis of your data:
This will be done during the lab session on **Thursday November 7.** *Each group must hand in statistical analysis of their data and a short report (a few sentences) stating the results of the test by uploading on Canvas.*

6. Prepare your presentation:
This will be done during the lab sessions on November 14 (Groups 1-8, including Group 4.5) or November 21 (Groups 9-17). Groups need not attend the lab session they are not assigned to.

7. Present your project to the class:
This will be done during class time on November 21, 26 and 28 (please check the Lecture Schedule for each group's assigned date).
Each group will have **7 minutes** for their presentation followed by a **2-minute** question period. Each group member must be involved in either the preparation or oral delivery of the presentation. Be sure to: give some background on your topic, describe the stimuli, task, data collection and analysis, show your results, interpret your results, discuss problems encountered or things you would do differently, suggest future experiments. All group members are expected to attend class on their presentation date. A grade will be assigned based on timing, creativity, preparation and organization, completeness, clarity, reference to class material, inclusion of relevant references and ability to answer questions. *A list of each group member's role in the presentation must be signed and handed in at the end of the presentation. Please email a copy of your slides to Dr. Oruc for grading either just before or after the presentation.*

7. Prepare a project report:
This is a typed report, due 5pm on **Thursday November 28**.

Each student must hand in their own *unique* report based on the group data. Organize your report with clearly labeled <u>Introduction</u> (objectives of your project, research question/hypothesis and rationale); <u>Methods</u> (task, conditions, what you measured [dependent variable], how you measured it, which statistical test you used and why); <u>Results</u> (table showing appropriate descriptive statistics, data graphs, short report of the results of your statistical test, p value, unusual data manipulations, significant difference?); <u>Discussion</u> (answer research question, what did you infer from the data, problems/changes, any concerns or reservations regarding your conclusions; suggestions for future study); <u>References</u> (authors, year, title, journal, volume, page numbers; do not list unless cited). An Appendix may be included, if necessary, to include raw materials, such as surveys. Title page, References and Appendix sections do not count towards the page limit.

Be sure to include your name, student # and group # on the title page. The report should be no longer than 5 double-spaced pages (12 pt font).

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Calculation of Research Project Grades

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group data collection protocol	**2%**
group data graph	**2%**
group statistical analysis	**2%**
group class presentation	**4%**
individual research report	**10%**
total	**20% of final grade**

- A penalty of 10% per day will be applied to late assignments. Assignments received more than 1 week after the due date will not be marked. Assignment may be submitted to *TurnItIn* to check for plagiarism.
- Each student is expected to attend the classes and sessions in which the planning, analysis and group presentation take place. Students who do not contribute to or miss a particular component will lose 2.5% of their final grade unless they have a documented medical excuse. Students will be asked to rate the contributions of their group members after the individual reports have been handed in. Grades may be adjusted for students whose group indicates that their contribution was minimal.
- Each member of a group will receive the group grade, unless they have failed to contribute to the proposal or presentation (as indicated by absence or a low score on the peer evaluations).