Course time and location: Lectures MW 11:30am & F 1:30pm in KTH B135; Tutorials F 3:30pm (various rooms).

Professor:
Dr. J. Ostovich
Email: jmostovich@mcmaster.ca
Phone: *Do not phone me.*
Office: PC-415A
Office hours: MW 1-2pm; but **email me by 4pm the day before** to say you're attending; otherwise, I might be at *Starbucks*.

Teaching Assistants:
Anita Acai (T1; UH 103): acaia@mcmaster.ca
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Please note: This syllabus – including scheduling, topic order, topics themselves, assessments dates and times, and assessment strategy – is subject to change if circumstances warrant (e.g., TA loss, "snow days", failure to secure testing rooms).

Course Description. This course is designed to introduce you to research methods in psychology. We will discuss basic foundations in empirical thinking, and major research designs used by psychologists, including both experimental and non-experimental designs. By the end of term, you will have the background necessary to assess, interpret, and do research.

Readings (required): Cozby & Rawn (2016)*. Methods in Behavioural Research,* 2nd Canadian Edition*.* Although it's a good idea to have the textbook for future reference, I will make a copy of this textbook available for you in the PC mailroom as soon as I can find a spot for it. Note that 160 of you will be competing for access to this copy!

Evaluation. Your final mark will be based on your performance on three tests (80%) and in tutorials (20%).

Tests: You will write two midterms (@20% for midterm 1 and 25% for midterm 2) and one final exam (@35%). These will cover lecture materials *and* assigned readings, *especially* (so that you will have a complete education in research methods) readings not discussed in class.

What will the tests be like? Tests will consist of multiple choice (MC) and written answer questions. You will answer a mixture of fact-based questions (e.g., "what is the definition of X?" or "what is the key term used to describe Y?"), conceptual questions (e.g., "why is concept X important?" or "how do you know that a researcher can draw conclusion Y?"), and applied questions (e.g., "given what you know about topic A, how would you design a study to test behaviour B?" or "Researcher X failed to include Y in their design. Is this a problem? Explain."]. Readings will be tested primarily in the MC section, and lectures will be tested primarily in the written section.

The two **midterms** will be **non-cumulative**, except for information that gets touched on across Parts 1 and 2 of the course (this information will be obvious to you). The final **exam** will be **cumulative**, but with a focus on materials taught in Part 3 of the course.

Tutorials: Performance in tutorials is worth 20% of your final mark in 3RM3.

Participation is worth 10% of your final mark. It will be marked out of 20 points, as follows:

(1) Tutorial leaders will randomly select and assess 1/3rd of their students each week, until every student's work has been assessed 3 times. Each of these assessments will be marked out of 5, for a total of 15 possible participation points. The participation marking rubric is available on *Avenue* under "course documents"; read this rubric so that you know what your tutorial leader will be looking for.

(2) Every day after tutorial, you must write notes on what you contributed to that day's tutorial – any question(s) you asked, any answer(s) you gave, any comment(s) you made, any input you had into group activities, etc. You can even write down how useful you thought your contribution was, and explain why. If you didn't contribute much, explain why (e.g., did you have a great idea that someone else mentioned? explain why you didn't join in once that other person spoke up). You must upload this record to your Dropbox on Avenue to Learn within 24 hours of the start of your tutorial. These reports will be worth a total of 5 possible participation points.

Bonus points are available for students who note an inconsistency between lecture and textbook, and bring in a cue card, with page numbers and specifics, outlining the perceived problem to their tutorial leader. These cue cards must be handed in during the week a topic has been discussed in class, so keep up with your readings, and read carefully, for the possibility of a participation bonus point.

The other 10% of your tutorial/lab mark will be based on your performance on two lab assignments. Assignment 1 (@5%) will involve running an observational study and handing in a written report of your methods and results; Assignment 2 (@5%) will involve planning a field or lab experiment (more information to follow on A2L and in tutorial) and giving an oral presentation of your proposed methods and results to your tutorial group.

For test and assignment dates, see below.

NB: The instructor reserves the right to alter the evaluation scheme if circumstances warrant (e.g., TA loss).

Test-Taking Policy. Electronics must stay in your bag, turned off. If a phone rings or vibrates during a test, you will be penalized **5%** off your *final grade in the course*. The only things allowed on your desk and/or outside of your bag during testing sessions are pens, pencils, erasers, something to eat or drink if needed, tissues if needed, and your student ID.

Missed Tests/Absences:

Tests: There are no makeup tests in this course: if you miss a test, the value of that test will be placed onto your final exam. You must report your absence to McMaster and to both Dr. Ostovich *and* your tutorial leader (CC'ed) **within 2 days of the missed test**. Failure to comply with the **two-days rule** could result in your earning a mark of zero on a missed test.

In order to receive any sort of accommodation, I must receive an official university email indicating that you've complied with university regulations, as well as your personal email requesting accommodation. You can find a link to these regulations here.

Tutorials: If you know *ahead of time* that you must miss tutorial, contact your tutorial leader (not Dr. Ostovich) *before* tutorial. If you miss tutorial but didn't know that you would, the same rule applies: contact your tutorial leader (not Dr. O.) *immediately* (within **24 hours**, unless you're demonstrably unable to do so, because trapped under something heavy, or unconscious).

Missed tutorials will be judged on a case by case basis.

A Note About How Assessments Are Marked: Some students, in the past, have worried that the tests and assignments are not marked fairly, and so here is some insight into how we do the marking.

First, multiple choice (MC) sections are scanned. Our scanning program gives me all sorts of psychometric information that tells me whether a given item worked as expected. For example, I know what proportion of the class, by final letter grade on the MC section, chose which answer option. From this, I can determine whether the answer key might have had a mistake in it, or whether a question might have been worded in such a way that there were two good answers, or perhaps even no good answer. In the case of two good answers, I just accept both of them as correct, and have the program make the necessary changes; in the case of no good answer, I delete the item from consideration. Some students complain "but I got that one right!". Well, actually, since there was no good answer, you didn't, so accept it and move on.

Second, the written answers are carefully marked. We have marking meetings during which, having previously read several of your answers, we discuss whether the key is a good fit for how students tended to interpret a given question, and particularly whether

- A student wrote a good answer that the key didn't predict. When that happens, that unexpected answer often gets folded into the key as an alternate answer.
- The key is too difficult for a given item. For example, if no one in our random sample can get a perfect on item X, then we consider re-weighting the marking of item X (that is, we decide not to penalize people for failing to get the bit no one is getting).

Here are a few other things you should know:

- Contrary to popular belief, other than key terms, students need not use the exact same wording as is in the key. However, what they write must *incontrovertibly* mean the same as what is in the key. If we have to guess or extrapolate … well, there are no points for that.
- We mark blind. Although we know which tutorials we're marking (e.g., TA1 is marking tests from Tutorials 1 and 2), we avoid looking at anyone's name or tutorial number. This prevents bias in favor of or against a given student or tutorial group.
- We compare several already-marked answers for reliability. That is, are the markers using the same standards? Are they deviating from the key appropriately? (meaning, are they equally likely to say "this isn't the same wording Dr. O. used, but it means the same thing and covers all the bases, so full points"?).
- We compare medians for items marked by the same TA (so if marker 1 and marker 2 both marked question 1, we check that their students performed about the same on that question). We're looking to determine whether one marker appears to be marking harder or easier than the others. If that's the case, then we exchange tests to make sure that marker A (who seems too tough) and marker B (who is marking like everyone else) are giving points for all of the same things. If they are, then fine, there's nothing to worry about; if they're not, then marker A might have to go through all of his or her tests again.

Third, for assignments, participation, and etc., we have very strict keys, and we adhere to them. We are not just playing it by ear!

E-mail Policy. E-mails must originate from a **valid McMaster account** (please use *MacMail* rather than the *Avenue* system for all e-mail communication). As per McMaster policy, e-mail sent from third-party providers (e.g., hotmail, cogeco, google) will be deleted. Please also keep in mind that e-mails to your professors and TAs are professional communications. They should (1) include correct spelling and punctuation, (2) have an *informative subject line*, and (3) be brief.

Website Policy. You are expected to check our *Avenue to Learn* website regularly for announcements, updates, discussion board postings, and other valuable information. It is *your responsibility* to keep up with the information provided on this site.

Use of the website's **discussion boards** is strongly encouraged, and, in the case of non-private inquiries, is *preferred to email communication*. By asking questions on the discussion boards (rather than over e-mail), you are (1) giving other students the chance to benefit from your question, and (2) provide an encoding (learning) experience for students who wish to answer your question (this is *strongly* encouraged!).
The discussion boards are meant to be a "safe place" for asking and answering questions. Students who are rude or inconsiderate (e.g., "trolls") may be banned from using them.

Finally, students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

A Note About Facebook Course Groups: It's up to you whether you create one, of course. However, these are not great for two reasons.

(1) They can create mass hysteria. As a student of psychology, you should find this idea obvious. Very few people who disagree with your complaint (usually about a test) will speak up, but most of the people who share your complaint will chime in. This will lead you, through a process social psychologists call "pluralistic ignorance") to the incorrect conclusion that "everyone" is upset about X or Y, and you will therefore get all emotional (this is counterproductive when you're trying to *learn* from a mistake) and make a fool of yourself when you come to me about it (this class has about 375 students … there is no way that "everyone" or even "most people" share your complaint, especially when at least half of them are have earned As and Bs on the test you're upset about). If you have a problem with any aspect of the running of this course, email psy2aa3@ instead … that's where problems are addressed; Facebook is where problems are created.

(2) They can, through a sort of "broken telephone" process, convince you that incorrect answers are correct. We often see answers that appear to have come from some distant planet – there is nothing in anyone's notes (that's me plus 7 TAs checking to see if we can figure out the weird answer!) that says anything like what the odd answer was. We've discovered that actually, these answers have been created on Planet Facebook. What a shame that you used Facebook to ask your question, instead of the TA- and instructor- monitored A2L website!

Policy re. the Recording of Lectures. If you feel that recording lectures will help you perform optimally in the course, then feel free to do so. You are especially encouraged to record lectures *if you find my pacing a bit fast*. HOWEVER: Consider the lectures **copyrighted material**: you **cannot post recordings anywhere online**, including on our *Avenue* website.

Final Grade Calculations. Your final grade will be converted to a letter grade, according to the following scheme:

Percentage (Grade)	Percentage (Grade)	Percentage (Grade)	Percentage (Grade)
90-100 (A+)	77-79 (B+)	67-69 (C+)	57-59 (D+)
85-89 (A)	73-76 (B)	63-66 (C)	53-56 (D)
80-84 (A-)	70-72 (B-)	60-62 (C-)	50-52 (D-)
			0-49 (F)

Note: The instructor reserves the right to adjust final marks up or down, depending on overall performance in the course. Students *who do not pass the final*, or whose final exam mark is their *lowest mark* in the course, will *not* have their mark adjusted up under any circumstances.

Note as Well: Your final mark is your final mark, unless a marking or mathematical error has been made. Special favours to one student are unfair to the majority of students who neither ask for nor get those same favours. Therefore, if you are concerned about your final mark, it is your responsibility to visit with me or with one of your TA's for studying help.

Academic Integrity. You are expected to exhibit honesty and use ethical behavior in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behavior can result in serious consequences, e.g., a grade of zero (0) on an assignment, loss of course credit with a notation on the transcript ("grade F assigned for academic dishonesty"), and/or suspension or expulsion from the university. It is *your* responsibility to understand what constitutes academic dishonesty. For information on academic dishonesty, please refer to McMaster's Academic Integrity Policy here.

DATES, TOPICS, AND READINGS

Basic structure of the course. Below, you will find a list of topics (with associated readings listed in **blue**) that I expect to cover this term. This syllabus *does not contain exact dates* other than those associated with tests. I do this in order to allow us flexibility in timing of topics. I will keep you updated on where you should be in your readings on the news section of our website. I will also remind you of which topics will be covered on each test.

A note on the readings. Extra readings may be assigned as we go (these will be posted on *Avenue*; it is your responsibility to keep track of any added content by keeping up to date on the website). Plan carefully so that you do not find yourself "cramming" the readings at the last minute. Please note that I will not always explicitly discuss a given reading. *Read and learn all readings anyway*.

A note on dates and deadlines. The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If a modification becomes necessary, reasonable notice and communication with the students will be given with an explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

Test dates.

Midterm 1: Wednesday 4 October (during class time; room assignments TBA on A2L)
Midterm 2: Friday 10 November (during class time; room assignments TBA on A2L)
Final Exam: To be scheduled by the Registrar

LECTURES: Topics and Readings.

Unit 1. Foundational Concepts in Research Methods.
  - Module 1: What is Empirical Thinking? Ch. 1
  - Module 2: Why is Empirical Thinking Better Than Other Forms of Thinking? Ch. 1
  - Module 3: How Science Progresses: The Theory-Data Cycle. Ch. 2
  - Module 4: Three Scientific Claims and How to Evaluate Them. Ch.'s 4 & 14
  - Module 5: Research Ethics. Ch. 3

Unit 2. Non-Experimental Research Designs.
  - Module 1: Measurement Ch. 5
  - Module 2: Correlational Research
  - Module 3: Survey Research Ch. 7
  - Module 4: Observational Research Ch. 6

Unit 3. Experimental Research Designs.
  - Module 1: Single Factor Designs Ch's. 8 & 9
  - Module 2: Factorial Designs Ch. 10
  - Module 3: Quasi-Experimental Designs Ch. 11; also read Walton (2013) and Colquhoun & Novella (2013) as prep for a class discussion (available on *Avenue to Learn*)

TUTORIALS: Topics and Readings.

Unit 1. Foundational Concepts in Research Methods.
- Tutorial 1 (Sept 8th): Introductory stuff.
  - Reading: Colquhoun & Novella (2013), available on *Avenue to Learn*
- Tutorial 2 (Sept 15th): Empiricism *vs*. the rest.
- Tutorial 3 (Sept 22nd): Theory-data cycle.
- Tutorial 4 (Sept 29th): Making claims.
  - Readings: Colquhoun & Novella (2013), and Bakalar (2016), available on *Avenue to Learn*

Unit 2. Non-Experimental Research Designs.
- Tutorial 5 (Oct 6th): Design a survey.
- Tutorial 6 (Oct 20th): Try again.
- Tutorial 7 (Oct 27th): Observational research.
- Tutorial 8 (Nov 3rd): Interpreting cross-lagged correlations and multiple regression results.

Unit 3. Experimental Research Designs.
- Tutorial 9 (Nov 10th): Experimental control.
  - Reading: de Bruin, van der Zwan & Bögels (2016), available on *Avenue to Learn*
- Tutorial 10 (Nov 17th): Design an experiment.
- Tutorial 11 (Nov 24th): PRESENTATIONS
- Tutorial 12 (Dec 1th): Interpreting data from factorial designs.