COURSE TITLE

CLINICAL RESEARCH METHODS

COURSE CODE AND SECTION, NAME OF PROFESSOR, SESSION, LOCATION, TIME

PSY5133 SECTION A, MARTIN LALUMIÈRE, FALL 2018, FSS 4012, FRIDAYS 11:30-14:20

OFFICE HOURS AND AVAILABILITY OF THE PROFESSOR

TUESDAYS 13:00-16:30. No appointments necessary. VNR 4020.

EMAIL

Martin.Lalumiere@uottawa.ca

BRIGHTSPACE

The course syllabus, lecture slides, assigned readings, assignment instructions, and other resources are available on Brightspace.

TEACHING ASSISTANT

Not applicable.

OFFICIAL COURSE DESCRIPTION

General research principles as they apply to research with clinical populations and to research on clinical services. Strategies for enhancing both the internal and external validity of research. Sampling, measurement, statistical power, and the selection of appropriate research designs.

COURSE CONTENT

This course provides an opportunity to refine and acquire new research skills and knowledge in the area of clinical psychology in general, and in your own research area in particular. Therefore, the course has two major objectives. First, to learn about clinical research issues and methods commonly encountered in the field of psychopathology (e.g., treatment outcome studies, specificity design, placebo effect, randomized clinical trials, meta-analysis). Second, to develop expertise in the research methods you plan to use in your dissertation research, and to share that expertise with your student colleagues. This course builds on the two statistics courses you took in Year One.

The course involves semi-formal lectures by the instructor, in-class discussions of readings, and a few invited lectures by experts in various clinical research areas or methods. Attendance and participation are essential.

Understanding the importance and impact of individual differences in clinical research is necessary for the conduct of valid research and the wise interpretation of findings. Good researchers are aware of issues of diversity (gender, sexual orientation, culture, etc.), inclusion, and representativeness. We address these issues throughout the course, for example, in the selection and recruitment of research participants.

TEACHING METHODS

The material will be covered in semi-formal lectures in class, with the aid of videos, assigned readings, and in-depth discussions. Slides will be available before class so that students can better follow and participate in the lectures and discussions. The instructor is not very interested in rote learning; he is very keen, however, to help students develop critical thinking skills (e.g., making inquiries and looking for evidence, not taking things for granted, keeping an open but skeptical mind, looking for links between ideas and topics, examining the logic of arguments). He once said that 'adopting a scientific mindset is an antidote against nonsense'. Learning about research methods helps feed the scientific mind.

GRADING METHODS

The evaluation is based on an article critique (10%), a research proposal (35%), a review of a research proposal by a student colleague (10%), a revised research proposal with a response to reviews by the student colleague and the instructor (25%), and class participation (20%). There is also a bonus assignment (2%).

The article critique consists of a discussion of a key empirical article from your area of research, with a focus on the methodology used by the authors. The critique should follow APA guidelines (6th edition) for formatting and referencing. The first page of the target article should be attached to the paper. The word count should be included on the last page of the paper. Students will give a brief presentation of the critique in class (10 min plus 5 min for questions). The target article should feature prominently in your research proposal and thus should be selected accordingly. The term *critique* is used here in the usual sense of *analysis* or *assessment*. 1,500 words (about 5-6 pages) maximum, excluding title page, references, and appendices.

The research proposal, for most of you, is a preliminary version of your dissertation proposal. It should contain most of the following:

- What you want to do (central hypothesis, research question, specific objectives).
- Why this is a reasonable thing to do (review of previous work done on the subject matter, rationale).
- Why this is important (new knowledge to be obtained; improvements to health that will result, if relevant).
- How you are going to do it (work plan, timelines, detailed descriptions of methods, analysis and discussion/interpretation of results, pitfalls, ways around the pitfalls, alternatives, threats to internal and external validity).
- Why *you* should do it (relevant prior experience and skills, collaborators for technical gaps, preliminary data showing feasibility).
- What you and any collaborator will do (description of roles).

A plain language summary should be included on page 2 (where an Abstract would usually be). A plain language summary is a summary of the proposal that can be understood by the general public. The proposal should follow APA guidelines (6th edition) for formatting and referencing. If your dissertation proposal contains more than one study, you may focus on the first study for this assignment. 15-20 pages (excluding title page,

references, and appendices); this page length approximately corresponds to the page limit for most granting agencies. A suggested structure for the proposal will be discussed in class.

The research proposal review is a review of someone else's proposal. Because this course is about research methods, the review should focus principally on methodology, but otherwise it can focus on any relevant aspect of the proposal (rationale, importance, research design, feasibility, etc.). APA formatting is not required for this assignment. Note that the review will not impact the grade given to the research proposal of the person you are reviewing. 1,500 words (about 5-6 pages) maximum, excluding title page, references, and appendices.

The revised research proposal is a revision of the proposal you originally submitted, with a separate document detailing your response to the reviews you received (how you modified the proposal in response to the reviews, why you think some suggestions should not be heeded, etc.). The proposal should still be no longer than 15-20 pages, and the response to reviews may be in point form and can be as long as you want (usually around 2-5 pages). Students present their proposal at the end of the semester in a 10-min talk (plus 5 min for questions). The revised proposal should follow APA guidelines (6th edition) for formatting and referencing. APA formatting is not required for the response to reviews.

The format for the class is that of a seminar with discussions. Participation is expected. Participating in a graduate seminar is a good way to become comfortable expressing your informed opinion in a respectful manner (or simply asking questions). Assigned readings will be made available prior to each class. Students are required to submit, at the beginning of each class, a discussion question based on the reading(s).

The bonus 'news clip' assignment consists of a discussion (1-2 pages) of a recent news report on a scientific study in the area of mental health. You select a news story that is based on clinical science (psychology if possible, but I am open to other topics, like medicine, nutrition, exercise, alternative therapies, etc.). You discuss the quality of the report in relation to the research design of the study. Why is it a fair and accurate report? Why is it not? Are the conclusions justified based on the limits of the study methods? Include the link to the story and the scientific report. APA formatting is not required. The bonus assignment can be submitted anytime during the semester, but no later than the due date of the revised research proposal.

Absences from class and the late submission of assignments must be supported by a medical certificate (see the University policy). Absences for any other serious reason must be justified in writing (email) to the instructor. The instructor reserves the right to accept or refuse the reason put forward. Justifications such as travel, jobs, conferences, training workshops, or the misreading of the syllabus are not acceptable.

COURSE TOPICS AND SCHEDULE

Some of the topics we will cover, not necessarily in that order:

> Scientific mindset
> Science in clinical psychology
> Planning a study and writing a research proposal
> Causality and research methods
> Correlational and experimental designs
> Specificity designs
> Internal and construct validity
> Null hypothesis significance testing: why is it now so uncool?
> Meta-analysis
> Qualitative methods
> Single-case experimental designs
> Propensity score matching

Conducting research in applied settings
Efficacy, effectiveness, evidence-based practice, science-based practice, practice-based evidence
Open science and questionable research practices

Key dates:

September 7	First class
October 12	Article critique (10%)
October 26	Reading week
November 9	Research proposal (35%)
November 16	Research proposal review (10%)
November 30	Brunch and proposal presentations (last class)
December 7	Revised research proposal and response to reviews (25%)

OPTIONAL TEXTS

Dienes, Z. (2008). *Understanding psychology as a science: An introduction to scientific and statistical inference*. Palgrave Macmillan.

If it were up to me, no one would be allowed to do psychological research until reading this book (or an equivalent). The first two chapters elegantly summarize the epistemological issues that researchers need to be aware of in order to properly understand the scientific process, evaluate science, and do science. The other three chapters are about statistical inference—the major approaches to answering research questions and their limitations. Chapter 3, on null hypothesis significance testing, should definitely be read.

Kazdin, A. E. (2017). *Research design in clinical psychology* (5th ed.). Pearson.

This book includes a lot of the material we will discuss in class, and I strongly recommend purchasing (or borrowing) it and reading it during the semester. It is often used as required reading in similar courses.

Okasha, S. (2016). *Philosophy of science: A very short introduction*. Oxford University Press.

A perfect book to get a feel for contemporary philosophical discussions about the nature of science, the nature of inference and explanation, and the progress of science.

I recommend reading Okasha first, following by Dienes (especially the first three chapters), and then Kazdin. It will give you a good idea of (1) what science is, (2) what science in psychology is, and (3) how science in clinical psychology is conducted.

REQUIRED READING (additional readings may be assigned in class)

Borckardt, J. J., Nash, M. R., Murphy, M. D., Moore, M., Shaw, D., & O'Neil, P. (2008). Clinical practice as natural laboratory for psychotherapy research: A guide to case-based time-series analysis. *American Psychologist, 63,* 77-95.

Dozois, D. J. A., Mikail, S. F., Alden, L. E., Bieling, P. J., Bourgon, G., Clark, D. A., . . . Johnston, C. (2014). The CPA presidential task force on evidence-based practice of psychological treatments. *Canadian Psychology, 55*, 153-160.

Drapeau, M., & Hunsley, J. (2014). Where's the science? Introduction to a special issue of *Canadian Psychology* on science in psychology. *Canadian Psychology, 55,* 145-152.

Earls, C. M., & Lalumière, M. L. (2009). A case study of preferential bestiality. *Archives of Sexual Behavior, 38,* 605-609.

Gigerenzer, G. (2004). Mindless statistics. *The Journal of Socio-Economics, 33,* 587-606.

Gray, K., & Wegner, D. M. (2013). Six guidelines for interesting research. *Perspectives on Psychological Science, 8,* 549-553.

Kaptchuk, T. J., Frielander, E., Kelley, J. M., Sanchez, M. N., Kokkotou, E., Singer, J. P., . . . Lembo, A. J. (2010). Placebos without deception: A randomized controlled trial in irritable bowel syndrome. *PLoS ONE, 5,* e15591.

Kazdin, A. E. (2017). *Research design in clinical psychology* (5th ed.). Pearson (Chapter 9).

Kirsch, I., Deacon, B. J., Huedo-Medina, T. B., Scoboria, A., Moore, T. J., & Johnson, B. T. (2008). Initial severity and antidepressant benefits: A meta-analysis of data submitted to the Food and Drug Administration. *PLoS Medicine, 5,* 0260-0268.

Marshall, W. L. (1997). The relationship between self-esteem and deviant sexual arousal in nonfamilial child molesters. *Behavior Modification, 21,* 86-96.

Singh, S., & Ernst, E. (2009). *Trick or treatment? Alternative medicine on trial*. Random Publishers (Chapter 1).

Taylor, W. D., Asgary-Eden, V., Lee, C. M., & LaRoche, K. J. (2015). Service provider's adherence to an evidence-based parenting program: What are they missing and why? *Journal of Child Family Studies, 24,* 50-56.

RESOURCES

Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada (2014). *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*. http://www.pre.ethics.gc.ca/pdf/eng/tcps2-2014/TCPS_2_FINAL_Web.pdf

Canadian Psychological Association (2012). *Evidence-based practice of psychological treatments: A Canadian perspective*. Ottawa, ON: Author.

Cumming, G. (2012). *Understanding the new statistics: Effect sizes, confidence intervals, and meta-analysis*. Routledge.

Garber, J., & Hollon, S. D. (1991). What can specificity designs say about causality in psychopathology research? *Psychological Bulletin, 110,* 129-136.

Holmes, W. M. (2014). *Using propensity scores in quasi-experimental designs*. Sage.

Hunsley, J., Elliott, K., & Therrien, Z. (2014). The efficacy and effectiveness of psychological treatment for mood, anxiety, and related disorders. *Canadian Psychology, 55,* 161-176.

Kazdin, A. E. (2017). *Research design in clinical psychology* (5th ed.). Pearson.

Kazdin, A. E. (2011). *Single-case research designs: Methods for clinical and applied settings* (2nd ed.). Oxford University Press.

Leech, N. L., & Onwuegbuzie, A. J. (2007). An array of qualitative data analysis tools: A call for data analysis triangulation. *School Psychology Quarterly, 22,* 557-584.