SYLLABUS (Winter 2018)
PSYC 513: Quantitative Analysis (Meta-Analysis)

Days/Time: Monday/Wednesday: 2:30PM – 3:50PM
Location: Cornett B111
Instructor: Dr. John Sakaluk (Pronouns: He/Him/His) (professor.sakaluk@gmail.com)
Office/Office Hours: Cornett A240 (see office hours schedule)

Required Texts:

Required Software:
R: http://cran.stat.sfu.ca
  - R is the primary data-analysis software we will be using for the course. It is free, and works on both Windows and Mac computers. Click the appropriate “Download and Install R” link, depending on your operating system, and the install the software.

R Studio: https://www.rstudio.com/products/rstudio/download2/
  - While R will be our primary statistics workhorse, it is not a very pretty program. RStudio is a free (and Windows-/Mac-friendly) supplemental program, that dresses R up a bit to make it more user-friendly and functional.

Resources for R
Using R may be new for many of you. Unfortunately, I can only devote a small portion of the class to getting people up to speed with basics of R. If you are entirely new (or very nervous) about using R, I strongly recommend taking DataCamp’s Introduction to R (for general R knowledge), and Introduction to the Tidyverse (for data manipulation) (about 4 hours each).

Meeting Policy
I am only available to meet for class purposes during my office hours. In order to ensure that everyone will have opportunities to meet with me during them, I have tried to mix up my week-to-week availability, rotating through different days/times so that no one will be consistently disadvantaged (i.e., because of a reoccurring class during office hours).

Email Policy
I will respond to emails regarding the class in batches: one batch Monday morning (approx. 9AM – 10AM) and again Thursday morning (approx. 9AM – 10AM). Please plan accordingly if you need to get in touch with me via email regarding questions/concerns about class content and/or course organization. Emergency-related emails (i.e., medical, family, personal, etc.,) should be directed to my UVic account (sakaluk@uvic.ca) to which I will respond more dynamically.

Limits of Final Project Consultation/Reminder of APA-Authorship Guidelines
The intent of this class is for you to work towards a publishable meta-analytic review in an area of your choice. Keep in mind, however, that my ultimate responsibility is to teach you foundations of meta-analysis, and not to ensure that your meta-analysis advances to a state of publishable quality. There is a limit, in other words, to the extent that I can make analytic corrections, troubleshoot code, clarify interpretations, etc., in order to stay in the realm of instructor (my strong preference), and not enter that of the realm of coauthor. Please keep in mind the APA guidelines for determining authorship (and their authorship determination score card, in particular) when making decisions about the extent to which you rely on my guidance in your project. I will do my best to let you know when I think we are approaching this boundary, but you have a responsibility to be aware of this dynamic as well.
Course Description
Psychologists cannot attain an understanding of generalizable psychological principles from the production (or reading of) individual studies: related studies are published at a rate that is too quick to keep pace with, and each effect in each study is estimated with some amount of error. In the present course, we will focus on one particular method of reviewing a literature of related findings: meta-analysis. The course will be largely project-focused, in which we will review conceptual, methodological, analytical, and practical issues in conducting meta-analytic syntheses; you will then apply this knowledge in conducting your own meta-analytic review on a topic of your choosing. The ultimate goal of the course is for you to work towards producing a publishable meta-analytic review.

Specifically, in our course, you will learn:
1. The role of “meta-analytic thinking” in the production and evaluation of knowledge
2. The history of meta-analytic methodology
3. How to identify appropriate research questions for meta-analysis
4. How to make meta-analyses reproducible, replicable, and theory-relevant
5. How to plan, conduct, and document literature searching strategies, in keeping with contemporary meta-analytic reporting requirements
6. How to extract, calculate, and convert between effect sizes from research articles
7. How to code aspects of effects and samples for moderator analyses
8. How to evaluate and correct for various statistical biases and artifacts in effect sizes
9. How to fit, interpret, and visualize meta-analytic models using R
10. How to fit and interpret tests of moderators via meta-regression models in R
11. How to evaluate the strength of evidence in published meta-analyses

What You Need to Succeed in this Course
1. To be able to identify a topic for your meta-analysis (absolute min. # of effects = 20) quickly (see Evaluation and Grading Policy)—you will not get much out of the course if you don’t have an area you are motivated to learn about through meta-analysis
2. To be able to make steady progress on your project throughout the semester—meta-analysis does not lend itself well to “binge-working”
3. To be willing to troubleshoot your own problems and experiment with solutions—make use of existing resources and communities of support
4. To be able to discern when a discussion in lecture is/isn’t relevant to your project—pay attention when you need to, otherwise make progress during protected class time

Resources for Success
These are some resources which you may find useful in learning more about meta-analysis and completing your final project:
1. A google-doc of many references to articles covering various facets of meta-analysis in more detail
2. The “meta-analysis”-tagged posts on CrossValidated; a good place for you to ask conceptual statistical questions (or search for answers)—be sure to use the “self-study” tag as well
3. The metafor() package website, which has a number of helpful resources for working with metafor().
## Evaluation and Grading Policy

<table>
<thead>
<tr>
<th>Item</th>
<th>Due Date</th>
<th>Points</th>
<th>% of Final Grade</th>
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<tbody>
<tr>
<td>Data Analysis Test</td>
<td>Mar. 19</td>
<td>200</td>
<td>~18%</td>
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<tr>
<td>Meta-Analytic Critique</td>
<td>Mar. 26</td>
<td>150</td>
<td>~13%</td>
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<tr>
<td><strong>Final Project</strong></td>
<td></td>
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<tr>
<td>Topic Selection</td>
<td>Jan. 15</td>
<td>25</td>
<td>~2.25%</td>
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<tr>
<td>Preregister: Search Strategy + Selection Criteria</td>
<td>Jan. 22</td>
<td>50</td>
<td>~4.50%</td>
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<tr>
<td>Bibliography</td>
<td>Jan. 31</td>
<td>100</td>
<td>~9%</td>
</tr>
<tr>
<td>Proposal Presentation</td>
<td>Feb. 5/ Feb. 7</td>
<td>100</td>
<td>~9%</td>
</tr>
<tr>
<td>Preregister: Coding Strategy</td>
<td>Feb. 19</td>
<td>50</td>
<td>~4.50%</td>
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<tr>
<td>Preregister: Analytic Strategy</td>
<td>Mar. 19</td>
<td>50</td>
<td>~4.50%</td>
</tr>
<tr>
<td>Final Paper</td>
<td>Apr. 4</td>
<td>275</td>
<td>25%</td>
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<tr>
<td>Poster Presentation</td>
<td>Apr. 4</td>
<td>100</td>
<td>~9%</td>
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<td><strong>Total</strong></td>
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<td><strong>1100</strong></td>
<td><strong>100%</strong></td>
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The final letter grade in the course will be based on a total rounded percent score. For example 89.5 to 89.9 is rounded up to 90% (A+), whereas 89.4 is rounded down to 89% (A).

- A+ = 90 – 100
- B+ = 77 – 79
- C+ = 65 - 69
- F = 0 - 49
- A  = 85 - 89
- B  = 73 – 76
- C  = 60 – 64
- D  = 50 - 59
- A- = 80 - 84
- B- = 70 – 72
- D- = 50 - 59

Late work will not be accepted without appropriate documentation. Students are expected to familiarize themselves with the Important Course Policy Information (attached).

**Meta-Analytic Critique**
I will assign you two meta-analyses to read, which attempt to synthesize the same literature, but come to very different conclusions. You will be asked to compare/contrast/evaluate/critique the methods used in each, and to write a brief report based upon this exercise. See Meta-Analytic Critique assignment description for more details.

**Data Analysis Test**
There will be a less-traditional test (notes-, code-, and Internet-usage all encouraged) during which I will ask you to perform and write-up the results of a basic meta-analysis on a pre-existing dataset.

**Final Project**
The bulk of your grade will come from various steps involved in the assigned final project. These steps are evaluated separately in an effort to keep you on-target to finish your final project by the end of the semester. See Final Project assignment description for details of each step.
Respect for Diversity

It is my intent that students from all diverse backgrounds and perspectives be well-served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socio-economic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you.

Schedule of Dates*

*Topics/dates subject to change at my discretion pending class progress

<table>
<thead>
<tr>
<th>Week/Day</th>
<th>Date</th>
<th>Topic(s)</th>
<th>Readings/Due Dates</th>
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<tbody>
<tr>
<td>1/Wed.</td>
<td>Jan. 3</td>
<td>1. Course Overview</td>
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• Chan & Arvey (2012)  
• Cooper (Chapter 1 and 7) |
• Valentine et al. (2010)  
• Cooper (Chapter 2) |
• Lakens, Hilgard, & Staaks (2016)  
• Gøtzsche et al. (2007)  
• Topic Due |
| 3/Wed.   | Jan. 17| 5. Searching, Selecting, and Screening Literature | • Cooper (Chapters 4) |
• Cooper (Chapter 5 [relevant through Feb. 21])  
• Search Strategy Preregistration Due |
| 4/Wed.   | Jan. 24| 7. Identifying and Coding Effect-Level and Sample-Level Moderators | • Cooper (Chapter 3) |
• Bibliography Due |
<table>
<thead>
<tr>
<th>Date</th>
<th>Month</th>
<th>Day</th>
<th>Topic</th>
<th>Notes</th>
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<tbody>
<tr>
<td>6/Mon.</td>
<td>Feb. 5</td>
<td></td>
<td>10. Proposal Presentations</td>
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<td>7/Mon.</td>
<td>Feb. 12</td>
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<td>READING WEEK</td>
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<td>7/Wed.</td>
<td>Feb. 14</td>
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<td>Borenstein et al. (2015)</td>
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<td>Schmidt et al. (2009)</td>
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<td>9/Wed.</td>
<td>Feb. 28</td>
<td></td>
<td>JOHN AWAY AT CONFERENCE</td>
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<td>Carter et al. (2017)</td>
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<tr>
<td>10/Wed.</td>
<td>Mar. 7</td>
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<td>16. Data Visualization for Meta-Analysis</td>
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<tr>
<td>12/Mon.</td>
<td>Mar. 19</td>
<td></td>
<td>19. Data Analysis Test</td>
<td>Data Analysis Preregistration Strategy Due</td>
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<td>Tsuji et al. (2014)</td>
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<td>13/Wed.</td>
<td>Mar. 28</td>
<td></td>
<td>22. Final Project Work Day</td>
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<tr>
<td>14/Mon.</td>
<td>Apr. 2</td>
<td></td>
<td>EASTER MONDAY</td>
<td></td>
</tr>
<tr>
<td>14/Wed.</td>
<td>Apr. 4</td>
<td></td>
<td>23. Poster Presentations</td>
<td>Final Paper Due</td>
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Commitment to Inclusivity and Diversity

The University of Victoria is committed to promoting, providing and protecting a positive and supportive and safe learning and working environment for all its members.

Policy on Academic Integrity including Plagiarism and Cheating

The Department of Psychology fully endorses and intends to enforce rigorously the Senate Policy on Academic integrity [https://web.uvic.ca/calendar2018-01/grad/academic-regulations/academic-integrity.html](https://web.uvic.ca/calendar2018-01/grad/academic-regulations/academic-integrity.html), p.37–40 UVic Calendar January 2018). It is of utmost importance that students who do their work honestly be protected from those who do not. Because this policy is in place to ensure that students carry out and benefit from the learning activities assigned in each course, it is expected that students will cooperate in its implementation.

The offenses defined by the policy can be summarized briefly as follows:

1. **Plagiarism.** You must make sure that the work you submit is your work and not someone else’s. There are proper procedures for citing the works of others. The student is responsible for being aware of and using these procedures.

2. **Unauthorized Use of an Editor.** The use of an editor is prohibited unless the instructor grants explicit written authorization.

3. **Multiple Submission.** Only under exceptional circumstances may a work submitted to fulfill an academic requirement be used to satisfy another similar requirement. The student is responsible for clarifying this with the instructor(s) involved.

4. **Falsifying Materials Subject to Academic Evaluation.** This includes falsification of data, use of commercially prepared essays, using information from the Internet without proper citation, citing sources from which material is not actually obtained, etc.

5. **Cheating on Assignments, Tests, and Examinations.** You may not copy the work of others in or out of class; you may not give your work to others for the purpose of copying; you may not use unauthorized material or equipment during examinations or tests; and you may not impersonate or allow yourself to be impersonated by another at an examination. The Department of Psychology has a policy of not making old examinations available for study purposes. Therefore, use of old exams without the express written permission of the instructor constitutes cheating by the user, and abetting of cheating by the person who provided the exam.

6. **Being an Accessory to Offences.** This means that helping another student to cheat (for instance, by showing or communicating to them answers to an assignment, or by allowing them to view answers on an exam) is an academic offence.

Instructors are expected to make every effort to prevent cheating and plagiarism. This may include the assignment of seating for examinations, asking students to move during examinations, requests to see student identification cards, and other measures as appropriate. Instructors also have available to them
a variety of tools and procedures to check for Internet and electronic media-based cheating. In instances of suspected or actual plagiarism or cheating, instructors, following prescribed procedures, are authorized to take steps consistent with the degree of the offence. These measures will range from a zero on the test or assignment or a failing grade for the course, probation within a program to temporary or even permanent suspension from the University.

Rights of Appeal are described in the Policy on Academic Integrity in the University calendar (on p. 38 in January 2018).

The definitive source for information on Academic Integrity is the University Calendar (p. 37-40 in January 2018) ([https://web.uvic.ca/calendar2018-01/grad/academic-regulations/academic-integrity.html](https://web.uvic.ca/calendar2018-01/grad/academic-regulations/academic-integrity.html))

Other useful resources on Plagiarism and Cheating include:
1. The Study Solutions Office: [https://www.uvic.ca/services/counselling/success/study/index.php](https://www.uvic.ca/services/counselling/success/study/index.php)
2. The Ombudsperson’s office: [http://www.uvss.uvic.ca/ombudsperson/pubsguides/plagiarism.pdf](http://www.uvss.uvic.ca/ombudsperson/pubsguides/plagiarism.pdf)