PSYC*7140, Course Outline: Winter 2020

General Information

Course Title: I/O DOCTORAL RESEARCH SEMINAR

Course Description:

Participants investigate a specific area of Industrial/Organizational. They critically review past and current research, including theory development and empirical findings. Participants work together to integrate past theory and findings, to note inconsistencies in the literature, and to identify promising areas for future investigations.

The current topic for the doctoral research seminar is multilevel analyses. Multilevel analyses and research designs are ubiquitous in I/O psychology. As a result, in order to understand much of contemporary research in I/O psychology an understanding of multilevel analyses is imperative. Moreover, for students seeking to publish research in I/O journals, multilevel analyses can frequently be requisite. As a result, the goal of the current seminar is to provide students with an in-depth knowledge of the multilevel analyses. The course will focus on interpretation and execution of a variety of multilevel analyses. No previous experience with multilevel analyses is required as the course will start with basic concepts founded in linear regression and build to more complicated issues and techniques.

Credit Weight: .50

Academic Department (or campus): Psychology

Semester Offering: Winter

Class Schedule and Location: Thursday, 11:30AM-2:20PM, in CRSC 403.

Instructor Information

Instructor Name: Jeffrey Spence
Instructor Email: spencejr@uoguelph.ca
Office location and office hours: Thursdays 2:30-3:30pm

Learning Outcomes

1 Critical and Creative Thinking: Problem Solving and Depth and Breadth of Understanding: The ability to solve analytic problems related to multilevel designs and analyses. Be able to apply multilevel statistics to original research designs and analyses.

2 Literacy: Quantitative Literacy, Technological Literacy, and Visual Literacy: The ability to understand, evaluate, and interpret results from multilevel designs and analyses. Comfort in using statistical software to conduct analyses. Ability to interpret and create visual aids used to interpret statistical results.

4 Communicating, Written Communication: The ability to express one's ideas, summarize, and interpret results. Synthesize information and arguments informed by statistical results and assumptions of statistical tests.

5 Professional and Ethical Behaviour: Personal Organization & Time management and Intellectual Independence: Using time management skills to complete assignments and readings. Work independently on course work and develop professional relationships with classmates through in-class discussions and exercises.

Topics

- What is nesting? Understanding the need for and opportunities multilevel analyses provide.
- Multilevel modeling notation
- Fixed and random effects
- Intraclass correlations and residual intraclass correlations
- Centering
- Cross-level interactions
- Model fit and complex error structures
- Sample sizes and power for multilevel models
- Multilevel Generalized Linear Models (logistic and poisson outcomes)
- Bayesian estimation of multilevel models
- Mediation for multilevel analyses
- Moderated mediation for multilevel analyses
- Multilevel confirmatory factor analysis

Lecture Content and Readings:

The lecture will be structured in three parts: (a) lecture, (b) practical demonstration, (c) practical exercises and assignments. You are responsible for all material presented in lectures, including any announcements.

Course Assignments:

Assignments:

Assignments (90%): There will be an assignment handed out each class (12 total). The assignments will be based on the topic, lecture, and practical demonstration for that class. There will be in class time to work on each assignment. The assignments are intended to give you a chance to engage directly with the material apply what you have learned and give you hands-on experience applying the statistical techniques learned in the course. Each assignment will be taken up as a class.

Because we will go over all assignments in class, you do not need to hand in your work for marking each week. Instead, keep all of your assignments in the course and hand these in at the end of the term. You must submit at least **9 of the 12** assignments. You are welcome to attach a cover note that directs me to whatever you feel are the best aspects of your work. I will assign you a mark based on my overall judgement of the quality of your written work, together with the quality of your contribution in class.

When turning in assignments it is important that the final product is **your own work**. You are welcome to work on assignments collaboratively and seek one another's assistance and advice; however, the final write-up must be your own work (i.e., in your own words). If you have any questions regarding this issue please ask the instructor or consult the University of Guelph's policy on cheating and academic misconduct.

Self evaluation (10%): At the end of the term, students will provide a self-evaluation (out of 100) for how much they believe they demonstrated effort to understand the material and how much they have learned in the course. The instructor may increase the self evaluation if it is perceived to be too low.

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
Self evaluation	**April 3**	**10**	**1-5**
Assignments	**April 3**	**90**	**1-5**

Course Resources

Texts:

Finch, W. H., Bolin, J. E., & Kelley, K. (2014). *Multilevel modeling using R*. New York: NY: Taylor & Francis Group.

Other Resources:

Course Website: On CourseLink. This website will contain announcements, lecture notes, discussion, and other information pertinent to the course.

Course Policies

Grading Policies

All assignments will be graded in accordance with standards established by the University of Guelph. Graduate Grade interpretation

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time. Failure to turn in assignments at the scheduled time will result in a grade of 0 for that assignment.

Please note that these policies are binding unless academic consideration is given to an individual student.

Course Policy regarding use of electronic devices and recording of lectures:

Electronic recording of classes is expressly forbidden without consent of the instructor. When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

University Policies

Academic Consideration

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the academic calendar for information on regulations and procedures for

Academic Consideration:
Grounds for Academic Consideration

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Graduate Calendar:

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact Student Accessibility Services as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 54335 or email accessibility@uoguelph.ca or the Student Accessibility Services Website

Course Evaluation Information

Please refer to the Course and Instructor Evaluation Website **.**

Drop date

The last date to drop one-semester courses, is April 3. For regulations and procedures for Dropping Courses, see Current Graduate Calendar