PSYC*7070, Course Outline: Fall 2018

General Information

Course Title: PSYCHOLOGICAL MEASUREMENT

Course Description:

Psychology 7070 covers measurement theory (classical test theory and item response theory), exploratory, and confirmatory factor analysis, and structural equation modeling. The course is designed for future practitioners and researchers. For future practitioners the course is intended to provide a background in psychometric methods that is necessary for the appropriate use of psychological tests and measures. For researchers, the course will illustrate the importance of taking measurement issues into account when conducting research as well as provide students with skills and knowledge to conduct a variety of useful psychometric analyses.

Credit Weight: .50

Academic Department (or campus): Psychology

Semester Offering: Winter

Class Schedule and Location: Fridays, 8:30-11:20am, in MCKN 315.

Instructor Information

Instructor Name: Jeffrey Spence
Instructor Email: spencejr@uoguelph.ca
Office location and office hours: Wednesdays 10:30-11:20

Learning Outcomes

1. Develop an in-depth understanding of classical test theory.
2. Compute and appropriately interpret evidence for reliability and validity.
3. Acquire an understanding of different test construction strategies and their implications for research and practice.
4. Understand and interpret item response theory analyses.
5. Understand how to properly interpret individual test scores and understand factors that influence their accuracy and validity.
6. Conduct and interpret exploratory factor analysis.

7. Conduct and interpret confirmatory factor analysis.
8. Acquire an introductory knowledge of structural equation modeling, including understanding model fit, model comparisons, model identification, and proper interpretation latent and structural models**.**

Lecture Content:

You are responsible for all material presented in lectures, including any announcements. Topics and dates:

- Week 1 (September 7): Introduction and Course Overview, What is Psychometrics?
- Week 2 (September 14): Regression and Correlation review, Introduction to Classical Test Theory and Reliability
- Week 3 (September 21^): More on Reliability
- Week 4 (September 28): Test Construction and Introduction to Validity
- Week 5 (October 5): Common Method Variance and Interpreting Test Scores
- Week 6 (October 12): MIDTERM (Covering Week 1 to Week 5)
- Week 7 (October 19): Item Response Theory
- Week 8 (October 26): Introduction to Factor Models
- Week 9 (November 2): Exploratory Factor Analysis: Decisions, and a Numerical Example of an Exploratory Factor Analysis
- Week 10 (November 9): Introduction to Structural Equation Modeling and Confirmatory
- Factor Analysis
- Week 11 (November 16): Confirmatory Factor Analysis Continued
- Week 12 (November 23): Final Exam (Covering Weeks 7-11)

Course Assignments and Tests:

Assignments:
Assignments (40%): There will be 5 assignments throughout the term (each worth 8%). The assignments are intended to give you hands on experience applying the statistical techniques learned in the course. At the class session when the assignment is due, the assignments will be taken up in class. Please make two copies of your assignments: one copy to be turned in at the **beginning of class**, and the other copy to be retained by you to serve as a basis for class discussion. When turning in assignments it is important that the final product is **your own work**. These are not group assignments and must be completed individually. 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.

Exams:

Midterm Exam (30%): Held during class time on October 12

The midterm will be written in class and will be based on all the material covered in lecture and in the assigned readings up to Monday October 24 inclusive.

End of term Exam (30%): Held during class time on November 23

The final exam will be written during the exam period and will be based on all material covered in lecture and in the assigned readings from October 19 to November 16 inclusive.

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
Midterm	October 12	30	1,2,3,5
Final Exam	November 23	30	4,6,7,8
Assignments	See schedule of dates	25	1-8

Course Resources

Recommended Texts:

Kline, R. B. (2005). *Principles and practice of structural equation modeling*. New York, NY: The Guilford Press.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory (3rd edition).* New York, NY: McGraw-Hill Inc.

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 instruc*tor.*

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, without academic penalty, is Friday November 2, 2018. For regulations and procedures for Dropping Courses, see [Current Graduate Calendar](#)