UNIVERSITY OF VICTORIA
DEPARTMENT OF PSYCHOLOGY

PSYC 513 (A01) CRN 31300
Quantitative Analysis
Foundations of Structural Equation Modeling

Summer 2022

Time:	MTWThF 10:30-12:20		
Room	Clearihue A030 Zoom Meeting ID: 875 6388 8150		Password: 746880
Instructor	Stuart MacDonald, PhD	**Office:**	Cornett A261
Office Hours	Flexible (e.g., prior/following class); By appointment	**Phone:**	250-472-5297
		E-mail:	smacd@uvic.ca

We acknowledge and respect the l! k"#!$! n peoples on whose traditional territory the university stands and the Songhees, Esquimalt, and W%S ÁNE& peoples whose historical relationships with the land continue to this day.

COURSE DESCRIPTION

This graduate course is designed to introduce you to the concepts and practical application of statistical methods for the analysis of manifest and latent variables. Core topics to be covered will include (a) definitions and

should apply to the Dean of Graduate Studies for an academic concession (deferral or DEF). Failure to complete one or more class assignments will result in a grade of "N" regardless of the cumulative percentage of all other elements of the course. N is a failing grade and factors into GPA as a value of 0.

In accordance with the University's policy on academic concessions, "A student who completes all course requirements is not eligible for an academic concession". Consequently, students can only request deferrals for the completion of required course components and not for non-essential course components.

You are expected to abide by the University's policy on plagiarism and cheating (see pp. 10-11).

COURSE REGISTRATION

You are personally responsible for checking your registration status before the end of the course-add period (Thursday, May 12, 2022). Please verify and confirm your registration status with me as, according to University policy, I am unable to facilitate a course addition after this date even if you have been attending class. Also note that Tuesday, May 24, 2022 is the last day for officially withdrawing without academic penalty. University policy states that failing to attend lectures does not constitute official withdrawal.

EVALUATION

Evaluation of your progress toward the course objectives will be based upon several graded requirements including: (a) a 2-page SEM analysis proposal, (b) presentation of research findings, (c) a written Method and Results section summarizing your SEM findings.

Ideally, the assignments will be completed using your own data (e.g., master's or dissertation data, data from a collaboration with your supervisor) that is well suited to SEM analyses. Doing so will be advantageous for your retention of the material (i.e., applying SEMs to data that you already understand), and will promote scientific efficiency (you could complete a method and results section and get published!). Data sets with 3 or more indicator variables for a given latent factor (e.g., 3 separate measures of well-being, a measurement scale with multiple items for each subscale) are preferable. **Please keep in mind that your data is your responsibility. If you are using data that is not suitable for SEM analysis, you will receive a zero for the assignment. If you have any questions about whether your data is suitable, please contact me as soon as possible.**

The expectations and rationale for each assignment are briefly outlined below.

(a) 2-Page SEM Proposal

The purpose of this assignment is to create a very brief outline/summary of your proposed project for the class presentation and final written assignment (see b and c below). The 2-page summary should include:

- an introduction to your research area and associated research questions (include any relevant hypotheses)
- a conceptual description of SEM based on your own understanding

Your 2-page proposal (25%) is due by midnight on THURSDAY, MAY 19, 2022 (electronic submission preferred). This due date may be modified backward for students who plan to work with data collected by others (e.g., data sets provided by the instructor) in advance of the detailed review of statistical models.

(b) Class Presentation of Research Findings

During the last few scheduled class sessions, you will be asked to give an oral presentation that summarizes key

to your research questions, overview of model fit, etc.) sections, (b) capacity for critical thinking and novelty,

May 13 + May 16
Foundations of Structural Equation and Modeling (SEM): Path Analysis
Underpinnings of SEM
Measurement error and its implications
Practical examples
Mediation and bootstrapping

Suggested Readings:
Klem, L. (1994). Path analysis. In L.G. Grimm, & P.R. Yarnold (Eds.), Reading and Understanding Multivariate Statistics (pp. 65-97). Washington D.C.: APA.

Hayes, A.F. (2009). Beyond Baron and Kenny (1986): Statistical Mediation Analysis in the New Millenium. Communication Monographs, 76, 408-420.

Calculation for the Sobel test: An interact

Model modification and interpretation
Practical examples: Measurement models using R/AMOS/Mplus

Suggested Readings:
Arbuckle, J.L. (2008). AMOS 17.0 User's Guide. Chicago: SPSS Inc.

**Please note that this is our final class! Wednesday, June 1, 2022

UNIVERSITY OF VICTORIA
Department of Psychology

Important Course Policy Information
Summer 2022

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://www.uvic.ca/calendar/future/grad/index.php#/policy/BJujesM_E?bc=true&bcCurrent=02%20%20-%20Policy%20on%20Academic%20integrity&bcGroup=Faculty%20Academic%20Regulations&bcItemType=policies . 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 f rom the learning activities assigned in each course, it is expected that students will cooperate in its implementation.

The offences 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 U se 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

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 [illegible]

A note to remind you to take care of yourself. Do your best to maintain a healthy lifestyle this semester by eating well, exercising, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress. All of us benefit from support during times of struggle. You are not alone.

Discovering Victoria, UVic and your Community:
Grad school can involve a lot of time studying and researching on your own – but it does not have to be an isolating experience. There are a lot of other grad students out there like you who are looking to connect outside of academics.
https://www.uvic.ca/graduate/campus/student-services/index.php

Counselling Services:
Counselling Services can help you make the most of your university experience. They offer free professional, confidential, inclusive support to currently registered UVic students. https://www.uvic.ca/student-wellness/wellness-resources/mental-health/index.php

Health Services:
The Student Wellness Centre also provides a full service primary health clinic for students https://www.uvic.ca/student-wellness/contacts/student-wellness-team/index.php#ipn-physicians

Centre for Academic Support and Learning https://www.uvic.ca/services/index.php#ipn-academic-support-learning

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