

Advanced Topics in Structural Equation Modeling

Location: CIQSS, 3535 Queen-Mary, Suite 420, Montréal

Dates: April 27–29, 2015

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Trainer

The seminar is under the responsibility of Dr. Rex B. Kline, Professor, Department of Psychology, Concordia University; rex.kline@concordia.ca; 514-848-2424, ext.7556; <http://tinyurl.com/rexkline>



Eligibility and Registration

The course is open to graduate students and postdoctoral fellows as well as to professors and applied researchers. The course is open to a maximum of 20 participants. Online registration will take place on the CIQSS web site. Contact and registration information:

Luc St-Pierre, l.st-pierre@umontreal.ca
CIQSS website, www.ciqss.umontreal.ca



Course Description and Content

The sessions are in English. This three-day seminar deals with advanced topics in structural equation modeling (SEM). It is assumed that participants have a working knowledge of basic SEM applications, including path analysis and confirmatory factor analysis (CFA) in single samples. Topics for this advanced seminar include:

- Power analysis at the model level
- Latent growth models and nonlinear curve fitting
- Evaluating measurement invariance in multiple-samples CFA
- Moderation and mediation in the same model
- Conditional process modeling
- Causal mediation analysis

The presentation of topics will be conceptually rather than mathematically oriented despite the advanced level of the course, and many research examples will be considered.



Seminar Web Page

From the seminar web page you can download the slides and articles in PDF format and also computer syntax, data, and output files in either text (ASCII) or PDF format for analysis examples. The address is

<http://psychology.concordia.ca/fac/kline/sem/qicss2.html>

¹Université de Montréal, INRS-UCS, McGill University, Concordia University, Université Laval, Université du Québec, Université de Sherbrooke.



Daily Schedule

Morning

9:15–10:45am	Session 1
10:45–11:00am	Break
11:00am–12:15pm	Session 2
12:15–1:30pm	Lunch

Afternoon

1:30–3:00pm	Session 3
3:00–3:15pm	Break
3:15–4:45pm	Session 4



Topics Schedule

Day	Topics
M	Power analysis, mean structures in SEM, latent growth models
T	Measurement invariance in multiple-samples CFA
W	Estimating moderation and mediation in the same analysis



Main Source (optional)

Kline, R. B. (2015). *Principles and practice of structural equation modeling* (4th ed.). New York: Guilford Press. (Book resource site for 3rd edition at <http://www.guilford.com/kline>)



Other Readings (see seminar web page)

Edwards, J. R. (2009). Seven deadly myths of testing moderation in organizational research. In C. E. Lance & R. J. Vandenberg (Eds.), *Statistical and methodological myths and urban legends: Doctrine, verity and fable in the organizational and social sciences* (pp. 143–164). New York: Taylor & Francis.

Edwards, J. R., & Lambert, L. S. (2007). Methods for integrating moderation and mediation: A general analytical framework using moderated path analysis. *Psychological Methods*, 12, 1–22.

Gregorich, S. E. (2006). Do self-report instruments allow meaningful comparisons across diverse population groups? Testing measurement invariance using the confirmatory factor analysis framework. *Medical Care*, 44 (Suppl. 3), S78–S94.

Hancock, G. R., & Freeman, M. J. (2001). Power and sample size for the Root Mean square Error of Approximation of not close fit in structural equation modeling. *Educational and Psychological Measurement*, 61, 741–758.

Park, I. & Schutz, R. W. (2005). An introduction to latent growth models: Analysis of repeated measures physical performance data. *Research Quarterly for Exercise and Sport*, 76, 176–192.

Pearl, J. (2014). Interpretation and identification of causal mediation. *Psychological Methods*, 19, 459–481.

Valeri, L., & VanderWeele, T. J. (2013). Mediation analysis allowing for exposure–mediator interactions and causal interpretation: Theoretical assumptions and implementation with SAS and SPSS macros. *Psychological Methods*, 2, 137–150.

Wu, A. D., Li, Z., & Zumbo, B. D. (2007). Decoding the meaning of factorial Invariance and updating the practice of multi-group confirmatory factor analysis: A demonstration with TIMSS data. *Practical Assessment Research & Evaluation*, 12(3). Retrieved from <http://pareonline.net/pdf/v12n3.pdf>