

## Structural Equation Modeling Advanced Topics

**Location:** CIQSS, 3535 Queen-Mary, Suite 420, Montréal  
**Dates:** May 7–9, 2024, 9:30am–4:30pm

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### Trainer

The seminar is under the responsibility of Dr. Rex B. Kline, Professor, Department of Psychology, Concordia University, Montréal; [rex.kline@concordia.ca](mailto:rex.kline@concordia.ca); 514-848-2424, ext.7556;  
<https://www.concordia.ca/faculty/rex-kline.html>



### Eligibility and Registration

The course is open to graduate students and postdoctoral fellows as well as to professors and applied researchers. The seminar is limited to a maximum of 25 participants registered on a first-come, first-served basis. Online registration will take place on the CIQSS web site at

<https://www.ciqss.org/evenement/atelier/advanced-topics-structural-equation-modeling-seminar>

Contact, Luc St-Pierre, [luc.st-pierre@ciqss.org](mailto:luc.st-pierre@ciqss.org)



### Description

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:

- Planning sample size (power analysis, accuracy in parameter estimation, simulation)
- Analyzing ordinal data in categorical CFA
- Dynamic fit indexes
- Multiple-groups analyses
- Latent growth curve modeling
- Estimating moderation and mediation

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.

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<sup>1</sup>Université de Montréal, McGill University, Concordia University, Université du Québec à Montréal, Institut national de la recherche scientifique, Université de Sherbrooke, Université Laval, HEC Montréal, Réseau de l'Université du Québec



## Seminar Materials

Slides, readings, and computer syntax and output files for all examples can be downloaded from DropBox. A link will be sent to registered participants right before the seminar begins. Slides and articles are in PDF format, and all computer files are simple text files that can be opened in any basic text editor.

All analyses were conducted in R for Windows using packages for R. Both R and packages for R are freely available. Versions of R for Windows, Linux, and macOS platform computers are available from

<https://cran.r-project.org/>

A syntax file in the seminar materials, `install-r-packages.r`, can be run to install all the R packages used in analysis examples.

Additional examples of SEM analyses in R can be freely downloaded from the companion website for Kline (2023), *Principles and Practice of SEM*, at

<https://www.guilford.com/companion-site/Principles-and-Practice-of-Structural-Equation-Modeling-Fifth-Edition/9781462551910>



## Schedule

Morning

Afternoon

9:30–11:00am  
11:15am–12:15pm

Session 1  
Session 2

1:30–3:00pm  
3:15–4:30pm

Session 3  
Session 4



## Topics

- T Planning for sample size through power analysis, accuracy in parameter estimation, or Monte Carlo simulation; categorical CFA and dynamic fit indexes
- W Multiple-groups analysis; latent growth modeling
- Th Moderation analysis; conditional mediation (moderation and mediation)