Mplus Short Courses, Alexandria, Virginia, November 7-11, 2005

Statistical Analysis with Latent Variables Using Mplus

Muthén and Muthén will offer five one-day short courses on November 7, 8, 9, 10, and 11 in Alexandria, Virginia. These courses can be taken individually or in combination. Topics include regression, exploratory and confirmatory factor analysis, general structural equation modeling, growth modeling, modeling with categorical outcomes, modeling with missing data, multilevel modeling, and modeling with categorical latent variables including latent class analysis, growth mixture modeling, and discrete-time survival mixture analysis. For each topic, issues of model specification, identification, estimation, testing, and model modification will be discussed. Several examples will be examined. Modeling strategies will be presented. Mplus input setups will be provided and Mplus output will be used for interpretation of analysis results.

Pricing Information

Enrollment for the short courses is limited. Registration is available on a first-come, first-served basis. The early registration rate of $250 per day is in effect until September 1, 2005. After that, the registration rate is $295 per day. Catered breaks are included in the rate. Lunches are not included.

Cancellation Policy: A full refund will be made if a written request is received by September 1, 2005. Muthén & Muthén reserves the right to cancel or reschedule the short courses.

To register for Mplus Short Courses, please visit our online store.

Instructors

Bengt O. Muthén obtained his Ph.D. in Statistics at the University of Uppsala, Sweden and is Professor at the Graduate School of Education & Information Studies at UCLA. He is a former President of the Psychometric Society and currently has an Independent Scientist Award from the National Institutes of Health for methodological research.

Linda K. Muthén is the Director of Product Development at Muthén & Muthén. She obtained her Ph.D. in the Research Methods Division of the Graduate School of Education at UCLA. She was formerly the Manager of Quality Control and Customer Support at BMDP Statistical Software.

Course Information

The courses will be taught from 8:30am to 5:30pm each day. Course material will be presented in English. Following are the topics for each day:

Day 1, Monday, November 7: Traditional Latent Variable Modeling Using Mplus

Prerequisite: Regression analysis and introductory structural equation modeling

- Key concepts in linear regression analysis
- Path analysis
- Exploratory factor analysis (EFA)
- Confirmatory factor analysis (CFA)
- EFA in CFA
- Simple structure CFA
- Bi-factor CFA
- Second-order CFA
- Measurement invariance and population heterogeneity
- CFA with covariates
- Multiple group analysis
- Structural equation modeling (SEM)

Day 2, Tuesday, November 8: Growth Modeling With Latent Variables Using Mplus

Prerequisite: Intermediate understanding of latent variable SEM or Day 1
• Introductory growth modeling
  • Ideas behind modeling of individual differences in development
  • Comparison of multilevel, random effect mixed linear, and SEM growth approaches
  • Growth modeling using a latent variable framework
  • Linear growth model
  • Growth model with free time scores
  • Covariates in the growth model
  • Centering
  • Piecewise growth model
  • Growth models with individually varying times of observation and random slopes
  • Regression among random coefficients
  • Multiple process growth models

• Advanced growth modeling
  • Two-part growth modeling when outcomes have strong floor effects
  • Multiple group growth models
  • Multiple cohorts
  • Randomized preventive interventions
  • Multiple indicator growth models
  • Power calculations and design issues
  • A growth model as part of a bigger model

Day 3, Wednesday, November 9: Observed And Latent Categorical Variable Modeling Using Mplus

Prerequisite: Intermediate understanding of latent variable SEM or Days 1 and 2

• Modeling with observed variables that are categorical, censored, or counts
  • Logit, multinomial logit, probit, censored-normal, Poisson, and zero-inflated Poisson regression
  • Path analysis
  • Item response theory
  • Factor analysis with covariates
  • Multiple-group modeling
  • Growth modeling

• Modeling with latent variables that are categorical (mixture modeling)
  • Regression mixture analysis
  • Randomized response modeling of sensitive questions
  • Complier-average causal effect (CACE) estimation in randomized trials
  • Latent class analysis
  • Latent class analysis with covariates
  • Confirmatory latent class analysis
  • Violations of conditional independence
  • Latent class factor analysis, factor mixture modeling, structural equation mixture modeling

Day 4, Thursday, November 10: Longitudinal Modeling With Categorical Latent Variables Using Mplus

Prerequisite: Intermediate understanding of latent variable SEM and categorical variable modeling or Days 1, 2, and 3

• Latent transition analysis, Hidden Markov modeling
• Latent class growth analysis
• Growth mixture modeling with latent trajectory classes
• Randomized trials and treatment effects varying across latent trajectory classes
• Latent class growth analysis vs. growth mixture modeling
• Numerical integration, mixtures, and non-parametric representation of factor distributions
• Discrete-time survival mixture analysis
• Latent variable analysis with missing data
Day 5, Friday, November 11: Multilevel Modeling With Latent Variables Using Mplus

Prerequisite: Intermediate understanding of latent variable SEM, Days 1, 2, 3, and 4, or intermediate understanding of multilevel modeling

- Cross-sectional analysis with two-level data
  - Multilevel regression analysis
  - Multilevel path analysis
  - Multilevel factor analysis
  - Multilevel structural equation modeling
  - Multivariate modeling of family members, twin modeling
  - Multilevel latent class analysis

- Longitudinal analysis
  - 3-level growth modeling
  - 3-level, 2-part growth modeling
  - 3-level growth mixture modeling

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Location and Accommodations

The short courses will be held at the Old Town Holiday Inn Select in Alexandria, Virginia, just outside Washington, D.C. More information about the hotel can be found at [http://www.ichotelsgroup.com/h/d/hi/1/en/hd/axeot](http://www.ichotelsgroup.com/h/d/hi/1/en/hd/axeot). A special rate of $169 plus 10% room tax and $1 occupancy tax is available for a limited number of rooms until October 6, 2005 on a first-come first-served basis. Please mention **Mplus Short Courses** when calling for a reservation.

Holiday Inn Select
480 King Street
Alexandria, VA 22314
(703) 549-6080

Click [here](#) for more detailed Driving Directions to the Old Town Holiday Inn Select from MapBlast!

Click [here](#) for other Mplus short courses.