

## Ph.D. in “Life Course Research” – Psychological curriculum

Academic Year 2023-2024

### Title: Longitudinal Structural Equation Modeling

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#### Objectives

This module offers a conceptual understanding and a comprehensive overview of structural equation models used for analyzing longitudinal data. The topics covered in this module encompass longitudinal measurement models, unconditional and conditional latent curve models, and cross-lagged panel models. By the end of this module, students will have acquired a firm grasp of the primary methods for analyzing longitudinal data. Through empirical examples and practical applications in various life course processes and developmental pathways, students will gain hands-on experience. In addition, students will become proficient in applying the content of this module using the statistical software Mplus.

#### Program

*Monday afternoon* (Instructor: prof. Elisa Cavicchiolo):

- Brief review of SEM (Structural Equation Modeling)
- Introduction to the measurement of change
- Longitudinal measurement invariance
- Exercise and practical applications using the Mplus software

*Tuesday afternoon* (Instructor: prof. Elisa Cavicchiolo):

- Introduction to Latent Growth Curve Models
- Unconditional Latent Curve Models
- Exercise and practical applications using the Mplus software

*Wednesday afternoon* (Instructor: prof. Elisa Cavicchiolo):

- Conditional Latent Curve Models
- Introduction to Cross-Lagged Panel Models
- Exercise and practical applications using the Mplus software

#### Suggested lecture

Newsom, J. T. (2015). *Longitudinal structural equation modeling: A comprehensive introduction*. Routledge/Taylor & Francis Group.

#### Requirements

Basic knowledge of SEM is required. Prior knowledge of Mplus is recommended.