

## COURSE OUTLINE

### 1. GENERAL

<b>SCHOOL</b>	Faculty of Social Sciences		
<b>ACADEMIC UNIT</b>	Psychology		
<b>LEVEL OF STUDIES</b>	Undergraduate		
<b>COURSE CODE</b>	<b>PSY4209</b>	<b>SEMESTER</b>	6
<b>COURSE TITLE</b>	<b>Introduction in Longitudinal Data Analysis</b>		
<b>INDEPENDENT TEACHING ACTIVITIES</b>	<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>	
Lectures and lab exercises	<b>3</b>	<b>6</b>	
<b>COURSE TYPE</b>	Skill development (Lab)		
<b>PREREQUISITE COURSES:</b>	Ψ1201 – Research Methods in Social Sciences I, Ψ1202 – Statistics I, Ψ2201 – Statistics II, Ψ1301 – Developmental Psychology I: Infancy and Early Childhood, Ψ2301 – Developmental Psychology II: Life course Development: Adolescence to Late Adulthood		
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	Greek		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	No		
<b>COURSE WEBSITE (URL)</b>	<a href="https://elearn.uoc.gr/course/index.php?categoryid=112">https://elearn.uoc.gr/course/index.php?categoryid=112</a>		

### 2. LEARNING OUTCOMES

#### **Μαθησιακά Αποτελέσματα**

The aim of this workshop is to introduce students to the formulation and analysis of questions related to developmental/change processes (i.e., questions of a longitudinal nature), and to the basic methods of longitudinal data analysis within a Structural Equation Models (SEM) framework. Emphasis is placed both on understanding the questions that can be addressed with longitudinal data (e.g., longitudinal changes vs. individual differences), and on presenting and learning analytical techniques. Students will be asked to think about and formulate research questions of a longitudinal nature, and will then be exposed to different methods of analyzing longitudinal data. Finally, they will practice the application/use of these methods.

At the end of the workshop, the student will:

- understand the different types of research questions that can be answered with longitudinal data

- understand the basic principles of Structural Equation Models
- be able to use longitudinal data analysis techniques at a basic level
- learn to match research questions with appropriate longitudinal data analysis methods.
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### General Competencies

- Search, analysis and synthesis of data and information, using the necessary technologies
- Decision making
- Autonomous work
- Project planning and management
- Exercise criticism and self-criticism
- Promotion of free, creative and inductive thinking

### 3. SYLLABUS

- Introduction to the theoretical concepts of longitudinal analysis methods: The study of developmental processes
- The difference between the study of individual differences from the study of developmental processes (between-person vs within-person approaches)
- Longitudinal methods applied to published research
- Introduction to Structural Equation Models
- Statistical Methods:
  - Data wrangling and visualization
  - Repeated measures ANOVA
  - Regression analysis to study changes over time
  - How a variable develops: Latent Growth Curve Modeling (LGCM) and Latent Change Score Modeling (LCSM)
  - Individual differences in development: Latent Class Growth Analysis (LCGA)
  - Temporal succession relationships: what comes first? - (Random Intercept) Cross-Lagged Panel Modeling (RI-CLPM)

### 4. TEACHING and LEARNING METHODS - EVALUATION

<b>DELIVERY</b>	In class (computer lab)
<b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b>	Use of ICT in teaching, support of the learning process through the 'e-class' electronic platform.

<b>TEACHING METHODS</b>	<i>Activity</i>	<i>Semester Workload</i>	<i>ECTS</i>
	Lectures	12 hours (4 lectures x 3 hours)	0,48
	Laboratory Exercise	27 hours (9 lectures x 3 hours)	1,08
	Independent study for the 1st Test	32 hours (8 hours/lecture)	1,28
	Independent study-practical exercises	32 hours (4 hours/lecture)	1,28
	Participation in 1st Test	1 hour	0,04
	Independent study for final exams	40 hours	1,60
	Final exams	2 hours	0,08
	<b>Total</b>	<b>146</b>	<b>5,84</b>
	<b>STUDENT PERFORMANCE EVALUATION</b>	<p>I. One progress test (40%)</p> <p>II. Final exam (60%)</p> <p>Exams will be conducted in Greek.</p>	

## 5. RECOMMENDED REFERENCES

### Basic:

- Kline, R.B. (2023). *Principles and Practice of Structural Equation Modeling*. ISBN 9781462551910. Guilford Press.
- Ζαφειρόπουλος, Κ. (2012). *Ποσοτική εμπειρική έρευνα και δημιουργία στατιστικών μοντέλων*. Αθήνα: Κριτική. Κωδικός στον Εύδοξο: 22713529

### Supportive:

- Ρούσσος, Π., & Τσαούσης, Ι. (2020). *Στατιστική στις επιστήμες της συμπεριφοράς με τη χρήση SPSS και του R*. Αθήνα: Gutenberg.