

ECTS Syllabus

Course title	Advanced Quantitative Research and Statistical Analyses				
Course code	EDU-802E				
Course type	Required				
Level	3 rd Cycle				
Year / Semester	1 st Year, Fall/Spring				
Teacher's name	Dr. Elena Papanastasiou				
ECTS	10	Lectures / week	3 hours per week	Laboratories / week	0
Course purpose and objectives	<p>The main objectives of the course are for the student:</p> <ul style="list-style-type: none"> • To provide an in-depth exploration of quantitative research methodologies, emphasizing their application and relevance in education. • To develop proficiency in constructing and analyzing multilevel and/or structural equation models, utilizing specialized statistical software packages. • To examine the methodologies for interpreting the results of such analyses within the context of educational research, focusing on implications for policy and practice. • To cultivate the ability to critically evaluate the design, methodology, and conclusions of published quantitative research studies in education. • To foster the skills necessary for the effective communication of research findings to both scientific and non-scientific audiences, including the formulation of clear, evidence-based recommendations for educational practitioners and policymakers. • To enhance the student's capacity to contribute original research that addresses complex issues in educational measurement and assessment, thereby advancing the field. 				
Learning outcomes	<p>Upon completion of the course, the student will be able:</p> <ol style="list-style-type: none"> 1. To critically read and understand research articles that have utilized advanced quantitative research methods. 2. To distinguish the cases in which each type of higher statistical analysis should be used. 3. To analyse and interpret data with the use of software such as HLM and AMOS. 				

	4. To write-up and present results of the statistical analyses that they performed.		
Prerequisites	-	Required	-
Course content	<ul style="list-style-type: none"> • Descriptive and inferential statistics • Concepts and principles of structural equation and multilevel models. • Hypothesis test and interpretation of results • Specification of data and models. • Creation and interpretation of structural equation models and their results. • Write-up of the methodology, results, and conclusions section of a quantitative research study. 		
Teaching methodology	Lecture, Experiential workshops, Individual assignments with formative feedback, student presentations.		
Bibliography	<p>American Psychological Association. (2020). <i>Publication manual</i>. (7th ed.). APA.</p> <p>Ercikan K., Wolff-Michael R, (2006). <i>What good is polarizing research into qualitative and quantitative?</i> 35(5), 14-23, Educational Researcher.</p> <p>Fraenkel, J. R., Wallen, N. E., & Hyun, H. (2023). <i>How to design and evaluate research in education (11th ed.)</i>. Prentice Hall</p> <p>Hancock, R.R., Stapleton, L.M., & Mueller, L.O. (Eds), (2019). <i>The reviewer's guide to quantitative methods in the social sciences (2nd ed.)</i>. Routledge.</p> <p>Kline R.B., (2023). <i>Principles and practice of structural equation modeling (5TH ed.)</i>. Guilford Press.</p> <p>Klinger, J.K., Scanlon, D., & Pressley, M. (2005). <i>How to publish in scholarly journals</i>, Educational Researcher, 34 (8), 14-27.</p> <p>Raudenbush, S. W., & Bryk, A. S. (2002). <i>Hierarchical linear models (2nd ed.)</i>, Thousand Oaks.</p> <p>Παπαναστασίου, Ε., & Παπαναστασίου Κ. (2021). <i>Μεθοδολογία Εκπαιδευτικής Έρευνας (4^η έκδ.)</i>.</p> <p>Παπαναστασίου, Ε., (2018). <i>Εμπόδια στην ποιότητα της εκπαιδευτικής έρευνας. Προβληματισμοί και εισηγήσεις</i>, Εκπαιδευτική έρευνα, θεωρητικοί προβληματισμοί και προσανατολισμός στην ερευνητική πράξη.</p> <p>Tabachnick, B.G., & Fidell, L.S., (2022). <i>Using multivariate statistics (7th ed.)</i>. Pearson.</p>		
Assessment	Small scale research study, smaller written assignments, presentation, final exam		
Language	Greek/English		