COURSE SYLLABUS

(1) GENERAL

SCHOOL	SOCIAL SCIENCES
ACADEMIC UNIT	PSYCHOLOGY
LEVEL OF STUDIES	POSTGRADUATE
COURSE CODE	KPE-06 SEMESTER 2nd
COURSE TITLE	Quantitative data processing: methods and analysis techniques

INDEPENDENT TEACHING ACTIVITIES	WEEKLY TEACHING HOURS	CREDITS
Lectures and laboratory exercises	3	5

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	General background (Compulsory)
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	NO
COURSE WEBSITE (URL)	https://elearn.uoc.gr/course/view.php?id=860

(2) LEARNING OUTCOMES

Learning outcomes
The aim of the course is for students to understand the logic underlying the application of various statistical criteria and techniques, to be able to select the appropriate technique and to carry out the necessary calculations, mainly using modern software programs (with particular emphasis on SPSS and jamovi). The aim of the course, in addition to understanding and interpreting the results of the application of statistical techniques, is to critically evaluate results presented in published research. The course includes Lectures and laboratory courses. Presentations of scientific articles. During the lectures, in addition to the theoretical presentation of each statistical criterion, the way in which we use the statistical software (SPSS and jamovi) will be presented. Attendance of the lectures is compulsory (only 2 absences are excused). All educational material will be available on the e-learn platform of the University of Crete.

General Competences
•   Search for, analysis and synthesis of data and information, with the use of the necessary technology •   Decision making •   Working independently •   Production of free, creative and inductive thinking.

(3) COURSE OUTLINE

• Lecture 1: Revision:(Course Presentation. Quantitative Variables. Variable Distribution, graphs, normal distribution. Introduction to statistical inference: Hypothesis testing. Types of errors, power and sample size)

• Lecture 2: Central tendency indicators, dispersion indicators. Confidence intervals. Correlation index. Introduction to SPSS (Application to SPSS: Descriptive Statistics, Normal Distribution Test, Correlation Index). Non-parametric tests

• Lecture 3 Simple Linear Regression - The General Linear Model. (Application in SPSS: -Simple Linear Regression)

• Lecture 4: Multiple Linear Regression (SPSS application: Multiple Linear Regression)

• Lecture 5: Moderation analysis (SPSS application)

• Lecture 6: Mediation Analysis (SPSS application)

• Lecture 7: Comparison of Means I: t test ANOVA (SPSS application)

• Lecture 8: Comparison of Means III: The Factorial Analysis of Variance. (SPSS application: Factorial ANOVA)

• Lecture 9: Exploratory Factor Analysis (EFA) (SPSS application: EFA)

• Lecture 10: Confirmatory Factor Analysis (CFA). (Application in jamovi: CFA)

• Lecture 11: Logistic Regression and MANOVA (Application in SPSS & jamovi)

• Lecture 12: Path Analysis & Introduction to Structural Equation Modeling (Application in jamovi)

• Lecture 13: Introduction to multilevel regression modeling (Application in jamovi)

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY.	Face to face		
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	Use of Information and Communication Technologies (ICT) in teaching. Use of e-class for the support of teaching and the achievement of learning outcomes, and for communicating with students.		
TEACHING METHODS	*Activity*	*Semester workload*	*ECTS Credits*
	Lectures	39 hours	1.56
	5 Evaluative tests	35 hours	1.40
	Individual assignment I	10 hours	.40
	Individual assignment II	10 hours	.40
	Independent study	35 hours	1.40
	Total	129 hours	5.16
STUDENT PERFORMANCE EVALUATION	The assessment of the course does NOT include a final examination. The final grade is derived from: • Five intermediate assessment tests (with multiple-choice questions and practical application of an appropriate statistical criterion to explore questions (70% of the total mark). • One individual data collection-processing task - information will be provided (20% of the total mark). Delivery on completion of the course		

	• Analysis of the statistical methodology of a research article (10% of total mark). Delivery at the completion of the course

(5) BIBLIOGRAPHY

Suggested bibliography:

- Field, A. (2013). Discovering statistics using IBM SPSS statistics. Sage
- Hayes, A.F. (2018). Introduction to mediation, moderation and conditional process analysis. New York: Guildford Press
- Dancey, C.P & Reidy, J. (2020).Statistics without maths for psychology. Pearson education.

- Related academic journals:

- Scientific articles dealing with topics and applications of statistical techniques covered in the course (to be posted in e-learn by the instructor).
- At: https://www.youtube.com/user/zampetakisla/ you will find short videos with instructions on how to perform basic statistical techniques with SPSS and jamovi