

COURSE OUTLINE

1. GENERAL

SCHOOL:	SOCIAL SCIENCES		
DEPARTMENT:	PSYCHOLOGY		
LEVEL:	UNDERGRADUATE		
COURSE CODE:	Ψ3102	SEMESTER	5th
COURSE TITLE:	Statistics II		
TEACHING ACTIVITIES		WEEKLY HOURS	ECTS
Lectures and laboratory exercises		3	6
COURSE TYPE		General background (Compulsory)	
PREREQUISITE COURSES:	Statistics I Research Methods I		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS?	Yes, in the form of Reading Courses in the English Language, written assignments and final test		
COURSE WEBSITE (URL):	https://elearn.uoc.gr/course/view.php?id=5256		

2. LEARNING OUTCOMES

Learning Objectives
<p>The course is a continuation of "Statistics I" and primarily focuses on criteria and techniques within the framework of inferential statistics. The course aims to help students develop both theoretical and practical skills in the analysis and interpretation of statistical data. The orientation of the course emphasizes fostering "statistical thinking." Statistical thinking refers to the ability to draw logical conclusions from various types of statistical data using statistical methods and techniques.</p> <p>Upon completing the course, students are expected to:</p> <ul style="list-style-type: none"> • Understand the fundamental principles governing inferential statistics and hypothesis testing. • Acquire knowledge of the theoretical background of the most important statistical techniques within the framework of inferential statistics. • Be capable of applying key techniques of inferential statistics using statistical software such as SPSS and jamovi. • Be able to interpret the results derived from the application of the most important techniques within inferential statistics.
General Competencies
<ul style="list-style-type: none"> • Search for, analysis and synthesis of data and information, with the use of the necessary technology • Working independently • Team work • Respect for difference and multiculturalism • Production of free, creative and inductive thinking.

3. SYLLABUS

The course content is linked to the 5 core axes of the curriculum: **Scientific Foundations [1], Scientific Research and Critical Thinking [2], Ethics and Social Responsibility [3], Communication Skills [4], Basic preparation for career decisions and professional rehabilitation [5]** (next to each week, the number of the axis related to the content is mentioned).

Week 1: Course Requirements- Introduction to Statistical Models [1, 2, 3]

- Review session – Measures of central tendency and dispersion
- The concept of the General Linear Model (GLM)
- The role of computers and ethical considerations in analyzing psychological data

Week 2: Comparing Two Means (Parametric and Non-Parametric Tests) [1, 2, 4]

- Presentation of the t-test within the framework of the General Linear Model
- Applications in psychological research using statistical software
- Interpretation and presentation of results

Week 3: Factorial Analysis of Variance for Independent Samples [1, 2, 4]

- Presentation of one-way ANOVA within the framework of the General Linear Model
- Applications in psychological research using statistical software
- Interpretation and presentation of results

Week 4: Repeated Measures Analysis of Variance [1, 2, 4]

- Presentation of within-subjects ANOVA within the framework of the General Linear Model
- Applications in psychological research using statistical software
- Interpretation and presentation of results

Week 5: Factorial Analysis of Variance [1, 2, 4]

- Presentation of Factorial ANOVA within the framework of the General Linear Model
- Applications in psychological research using statistical software
- Interpretation and presentation of results

Week 6: Simple Linear Regression [1, 2, 4]

- Presentation of linear regression – Similarities with ANOVA
- Applications in psychological research using statistical software
- Interpretation and presentation of results

Week 7: Multiple Linear Regression [1, 2, 4]

- Presentation of multiple linear regression
- Applications in psychological research using statistical software
- Interpretation and presentation of results

Week 8: Logistic Regression and Non-Linear Models [1, 2, 4]

- Presentation of logistic regression
- Applications in psychological research using statistical software
- Interpretation and presentation of results

Week 9: Moderation Analysis with Linear Regression [1, 2, 4]

- Presentation of the methodology
- Applications in psychological research using statistical software
- Interpretation and presentation of results

Week 10: Mediation Analysis with Linear Regression [1, 2, 4]

- Presentation of the methodology
- Applications in psychological research using statistical software
- Interpretation and presentation of results

Week 11: Exploratory Factor Analysis (EFA) [1, 2, 4]

- Presentation of the methodology
- Applications in psychological research using statistical software
- Interpretation and presentation of results

Week 12: Confirmatory Factor Analysis (CFA) [1, 2, 4]

- Presentation of the methodology and introduction to SEM models
- Applications in psychological research using statistical software
- Interpretation and presentation of results

Week 13: Review of Methods – Analysis of a Research Topic [2, 4, 5]

- Research questions for each method
- Student proposals for analyzing collected data
- Interpretation and presentation of results
- The role of statistics in psychologists' professional development.

4. TEACHING AND LEARNING METHODS - EVALUATION

DELIVERY:	Face to face		
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY:	<ul style="list-style-type: none"> - 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
	Lectures	39	1,56
	Midterm Assessment 1	13	0,52
	Midterm Assessment 1	13	0,52
	Midterm Assessment 1	13	0,52
	Midterm Assessment 1	13	0,52
	Participation in Research Data Collection	12	0,48
	Independent Study	45	1,80
	Final Exams	3	0,12
	Total Course Workload (25 hours per ECTS credit)	151	6,04
STUDENT PERFORMANCE EVALUATION:	Language of evaluation: Greek. For Erasmus exchange students' language of evaluation will be English. The evaluation criteria are presented during the first lecture and are posted on the course's webpage on eLearn. 1. Individual Assignment (15%) 2. Group Assignment (25%) 3. Written exam: (60%).		

5. BIBLIOGRAPHY**Books**

- Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). SAGE Publications
- Stigler, S. W. (2016). *The seven pillars of statistical wisdom*. Harvard University Press.
- Howell, D. C. (2012). *Statistical methods for psychology* (8th ed.). Cengage Learning.
- Salkind, N. J. (2017). *Statistics for people who (think they) hate statistics* (6th ed.). SAGE Publications.

- Johnson, R. L., & Thomas, P. K. (2017). *Essentials of statistical methods for psychological research*. Routledge.