UNIVERSITY OF PIRAEUS

FACULTY/SCHOOL	**School of Economics, Business and International Studies**		
DEPARTMENT	**Department of Economics**		
LEVEL OF STUDY	**Graduate**		
COURSE UNIT CODE	**ΟΚΣΤΑ02**	**SEMESTER**	**2th**
COURSE TITLE	**STATISTICS II**		
WEEKLY TEACHNG HOURS	**4**	**CREDITS (ECTS)**	**6**
COURSE TYPE	Background knowledge		
PREREQUISITE COURSES	-		
INSTRUCTION LANGUAGE	Greek/English (in case of Erasmus students)	**ASSESSMENT LANGUAGE**	Greek
OPEN TO ERASMUS	Yes		

LEARNING OUTCOMES

After completing the course, the students will be able to:

- Know the basic concepts of sampling (population, sample, sampling frame etc), recognize the different types and methods of sampling and apply them to real problems
- Can calculate the minimum required size of a sample
- Know the relative theory for point estimators
- Be aware of the importance of the Central Marginal Theory
- Calculate confidence intervals in continuous variables and percentages based on a sample
- Know the theory of hypothesis testing and solving relevant problems from the Economy and Business
- Know and be able to apply X2 tests
- Know the meaning and basic elements of simple regression

GENERAL COMPETENCES

- Search, analyze and synthesize data and information
- Solving economic and business problems by applying quantitative methods
- Support for decision-making

COURSE CONTENT

Introduction to sampling. Sampling distributions. Point estimators and their properties. Central limit theorem. Confidence intervals for the sampling mean and percentage. Sample size estimation. Introduction to hypothesis testing, types of error, definition and interpretation of the p-value. Hypothesis testing for the mean and percentage in one and two populations, for small and large samples, with known / unknown variance and for dependent and independent samples. Crosstable analysis, correlation between two variables, Chi-square statistic. Simple linear regression.

USE OF ICT IN TEACHING

Demonstration of the application of statistical packages (Minitab, SPSS) and Excel spreadsheets

COURSE DESIGN

Activity/Method	Semester workload
Lectures	52
Tutorials	12
Study	58
Exercises	26
Exam	2
Total	150

COURSE ASSESSMENT

Written examination having the form of a test with question of multiple choice or short description answers.

Especially for the ERASMUS students, the evaluation is based on a written essay to solve a real-life complex problem which requires the application of the theory and the methods presented in the course.

SUGGESTED BIBLIOGRAPHY

-Suggested bibliography:

Book 1. Introduction to business statistics. Aczel Amir . probability theory and applications, Code in Eudoxus : 59394390

Book 2. Statistical methods and linear regression. M. Fillipakis, Code in Eudoxus : 68402975

Book 3. Introduction to Econometric Analysis, Vol. 1. C. Agiakloglou and T. Benos. Code in Eudoxus : 68381144