

COURSE OUTLINE

(1) GENERAL

FACULTY/SCHOOL:	SCHOOL OF ECONOMICS, BUSINESS AND INTERNATIONAL STUDIES		
DEPARTMENT:	DEPARTMENT OF ECONOMICS		
LEVEL OF STUDY:	POSTGRADUATE		
COURSE UNIT CODE:	ΕΔΟΠ03	SEMESTER:	1 ST SEMESTER
COURSE TITLE:	QUANTITATIVE METHODS		
SELF RESULTING TEACHING ACTIVITIES:		WEEKLY TEACHING HOURS	CREDITS
LECTURES		3	7,5
<i>Add rows if necessary. The teaching organization and the teaching methods used are described in detail in (d).</i>			
COURSE TYPE:	GENERAL BACKGROUND		
PREREQUISITE COURSES:			
INSTRUCTION LANGUAGE AND ASSESSMENT LANGUAGE:	GREEK		
OPEN TO ERASMUS:	NO		
COURSE WEBSITE (URL):	NO		

(2) LEARNING OUTCOMES

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The current course will provide a thorough presentation of Quantitative and Econometrics analysis, the branch of Economics that deals with estimation and evaluation of theoretical results. The goal of this course is to help students understand how quantitative analysis works alone and/or in collaboration with Econometric Analysis in an effort to understand the behavior of economic phenomena by having you work on real data, rather than forcing you to memorize proofs of several theorems. The tools you will learn in this course will allow you to analyze data and derive policy conclusions.																			
General Competences <i>Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?</i> <table border="0"> <tr> <td><i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i></td><td><i>Project planning and management</i></td></tr> <tr> <td><i>Adapting to new situations</i></td><td><i>Respect for difference and multiculturalism</i></td></tr> <tr> <td><i>Decision-making</i></td><td><i>Respect for the natural environment</i></td></tr> <tr> <td><i>Working independently</i></td><td><i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i></td></tr> <tr> <td><i>Team work</i></td><td><i>Criticism and self-criticism</i></td></tr> <tr> <td><i>Working in an international environment</i></td><td><i>Production of free, creative and inductive thinking</i></td></tr> <tr> <td><i>Working in an interdisciplinary environment</i></td><td><i>.....</i></td></tr> <tr> <td><i>Production of new research ideas</i></td><td><i>Others...</i></td></tr> <tr> <td></td><td><i>.....</i></td></tr> </table>		<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>	<i>Project planning and management</i>	<i>Adapting to new situations</i>	<i>Respect for difference and multiculturalism</i>	<i>Decision-making</i>	<i>Respect for the natural environment</i>	<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>	<i>Team work</i>	<i>Criticism and self-criticism</i>	<i>Working in an international environment</i>	<i>Production of free, creative and inductive thinking</i>	<i>Working in an interdisciplinary environment</i>	<i>.....</i>	<i>Production of new research ideas</i>	<i>Others...</i>		<i>.....</i>
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• Analysis and synthesis of real data • Forecasting • Econometric analysis • Decision making • Working independently																			

(3) COURSE CONTENT

I. INTRODUCTION

- Economic versus Econometric Model
- Decision analysis

II. STATISTICS

- Random Variables (Discrete – Continues) and properties.
- Parameter vs. Estimator – Properties of Estimators
- Sample Mean and Sample Variance and statistical inference.
- Test for Normality

III. THE SIMPLE LINEAR REGRESSION MODEL

- Correlation Coefficient – Properties and hypothesis testing.
- The Simple Linear Regression Model – Presentation
- Regression vs. Correlation
- OLS Estimation
- Coefficient of Determination and correlation coefficient
- Properties of OLS Estimators
- Statistical Inference for the regression parameters and for the variance of the error term.
- Maximum Likelihood Estimation
- Forecast

IV. THE MULTIPLE LINEAR REGRESSION MODEL

- The Multiple Linear Regression Model – Presentation
- Matrix notation and OLS estimation
- Coefficient of Determination and Adjusted Coefficient of Determination
- Partial Correlation Coefficient
- Statistical Inference for the regression parameters
- Analysis of Variance
- Joint tests for linear restrictions of the regression coefficients
- Forecast
- Problem with regression analysis.

4) TEACHING METHODS-ASSESSMENT

COURSE DELIVERY:	In Class (Physical Presence)	
USE OF ICT IN TEACHING:	• Labs • Statistical software (packages)	
COURSE DESIGN:	ACTIVITY/METHOD	SEMESTER WORKLOAD
	Lectures	30
	Laboratory practice	9
	Homework (assignment preparation)	48
	Exam preparation	85
	Exams participation	3
	Course total	175
STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i>	LANGUAGE OF EVALUATION: • Greek	

<i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i> <i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i>	EVALUATION METHODS: • Homework assignments evaluation during the semester • Written exam at the end of the semester.
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(5) SUGGESTED BIBLIOGRAPHY

Suggested bibliography: • Αγιακλόγλου Ν. Χρήστος και Οικονόμου Σ. Γεώργιος, Μέθοδοι Προβλέψεων και Ανάλυσης Αποφάσεων, 2002, Εκδόσεις Ε. Μπένου, Αθήνα. • Αγιακλόγλου Ν. Χρήστος και Μπένος Ε. Θεοφάνης, Εισαγωγή Στην Οικονομετρική Ανάλυση, Τόμος Α, 2000, Εκδόσεις Ε. Μπένου, Αθήνα. Additional bibliography: • McClave, T. J., Benson, P. G. and Sincish, T., Statistics for Business and Economics, 9th edition, Prentice Hall, 2005. • Greene, W. H., Econometric Analysis, Prentice Hall, 2003. • Johnston, J. and Dinardo, J., Econometric Methods, McGraw Hill, 1997. • Newbol, P., Carlson, W. L. and Thorne, B. Statistics for Business and Economics, 6th edition, Pearson Prentice Hall, 2006. • Mills, T., The Econometric Modeling of Financial Time Series, Second Edition, Cambridge University Press, 1999. • Pindyck, S. R. and Rubinfeld, L. D., Econometric Models and Economic Forecasts, McGraw Hill, 1998. • Watsham, J. T. and Parramore, K., Quantitative Methods in Finance, International Thomson Business Press, 1997.
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