

COURSE OUTLINE

(1) GENERAL

SCHOOL	Business		
ACADEMIC UNIT	Management		
LEVEL OF STUDIES	1 st Cycle		
COURSE CODE	MATH-321	SEMESTER	Fall/Spring
COURSE TITLE	Statistics II		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>	WEEKLY TEACHING HOURS	CREDITS	
	2.5	6	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	specialised general knowledge		
PREREQUISITE COURSES:	MATH-221		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	English		
IS THE COURSE OFFERED TO ERASMUS STUDENTS			
COURSE WEBSITE (URL)			

(2) LEARNING OUTCOMES

<p>Learning outcomes</p> <p><i>The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> • <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i>
<p>After completion of the course students are expected to be able to:</p> <ul style="list-style-type: none"> • Use the SPSS package. • Construct graphs and tables for categorical and numerical data, using SPSS. • Use SPSS for statistical tests for one population mean. • Understand and execute statistical inference for dependent and independent samples (students should perform hypothesis testing for the comparison of two population means). • Understand and execute ANOVA tests (students should compare three or more means, by using One-way Analysis of Variance and post-hoc tests and making appropriate conclusions). • Use Chi-Square to execute Tests of Independence. • Understand Linear and Multiple Correlation (students should calculate correlation coefficients and create scatter diagrams using SPSS). • Perform Simple Linear Regression and Multiple Regression (formulate and investigate simple and multiple regression models). • Use models for forecasting and estimation and handle both cross-sectional and time series data.

General Competences

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?

Search for, analysis and synthesis of data and information, with the use of the necessary technology	Project planning and management
Adapting to new situations	Respect for difference and multiculturalism
Decision-making	Respect for the natural environment
Working independently	Showing social, professional and ethical responsibility and sensitivity to gender issues
Team work	Criticism and self-criticism
Working in an international environment	Production of free, creative and inductive thinking
Working in an interdisciplinary environment
Production of new research ideas	Others...

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) SYLLABUS

- The SPSS package:** all the topics that follow are taught combining theory with practice, using SPSS in the computer lab
- Types of data, Overview of data collection and sampling, Graphical analysis and tabulations**
Hypothesis testing for one population mean: follow-up on the theory learned in MATH-221 regarding this topic, but now using the statistical package SPSS, with real data.
- Hypothesis Testing for Dependent and Independent Samples:** Performing Hypothesis Testing for the difference between two Population Means.
- ANOVA for the comparison of more than two population means:** One-Way Analysis of Variance steps to compare three or more means and use of post-hoc tests to make appropriate conclusions.
- Chi-Square Tests of Independence:** analysis of categorical data, using Chi-Square tests of Independence.
- Linear and Multiple Correlation:** calculation and interpretation of correlation coefficients for the linear relation between numerical variables.
- Simple Linear Regression:** construction of simple linear regression models and interpretation of the results.
- Multiple Regression:** construction of multiple regression models and interpretation of the results.
- Forecasting and Estimation:** use models for forecasting and estimation and handle cross-sectional and time series data.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face-to-face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	<i>Use of ICT in teaching / Χρήση ΤΠΕ</i> <i>Communication with students / Επικοινωνία με Φοιτητές</i>	
TEACHING METHODS <i>The manner and methods of teaching are described in detail.</i> <i>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i>	Activity	Semester workload
	Lectures including demonstrations and in class exercises	35
	Individual reading and practice	55
	Exam preparation	60

<p>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</p>		
	Course total	150
<p align="center">STUDENT PERFORMANCE EVALUATION</p> <p><i>Description of the evaluation procedure</i></p> <p><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></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>Final Examination, Mid-term examination, Assignments/Projects.</p>	

(5) ATTACHED BIBLIOGRAPHY

Required Textbooks / Reading:				
Title	Author(s)	Publisher	Year	ISBN
Understandable Statistics	Brase, C.H. and Brase, C.P.	Wiley	2022 (13 th Edition)	978-0357719176
Recommended Textbooks / Reading:				
Title	Author(s)	Publisher	Year	ISBN
Basic Statistics for Social Research	Hanneman, R.A., Kposowa, A.J. and Riddle M.D.	John Wiley & Sons	2013 (8 th edition)	978-1118234150 (E-book)
*Access to print and electronic material provided through UNic Library.				