X21 STATISTICS

1. GENERAL

SCHOOL	ECONOMIC SCIENCES		
DEPARTMENT	ECONOMICS AND SUSTAINABLE DEVELPOMENT		
LEVEL OF STUDY	*Undergraduate*		
COURSE UNIT CODE	**X21**	**SEMESTER OF STUDY**	**2nd**
COURSE TITLE	**STATISTICS**		

COURSEWORK BREAKDOWN	**TEACHING WEEKLY HOURS**	**ECTS Credits**
Lectures, Lab, Exercise	**4**	**7.5**

COURSE UNIT TYPE	Compulsory
PREREQUISITES :	
LANGUAGE OF INSTRUCTION/EXAMS:	English
COURSE DELIVERED TO ERASMUS STUDENTS	YES (English)
MODULE WEB PAGE (URL)	

2. LEARNING OUTCOMES

Learning Outcomes

This is an introductory course to probabilities and statistics. Statistics is the study of the collection, organization, analysis, interpretation and presentation of data. Statistical methods are useful to all aspects of real life as business, management, education, medicine e.t.c. There are two major parts in the course:
-Descriptive statistics. Collection, classification, description and presentation of data.
-Probability theory.
All methods studied in the course are implemented using MS EXCEL.

After successful attendance of the course the students will be able to:

- Collect, classify, present a set of data
- Address real life probability problems
- Know basic probability distributions

General Skills

- Retrieve, analyse and synthesise data and information, with the use of necessary technologies.
- Make decisions.
- Advance free, creative and causative thinking.

3. COURSE CONTENTS

1) Introduction – Basic concepts (population, sample – sampling designs, type of data).
2) Descriptive statistics (frequency tables, graphical representation of data, measures of central tendency, measures of variation, measures of symmetry, outliers).

3) Introduction to Probability theory (random experiment, event, sample space, classical definition of probability, basic counting principles, combinations, permutations), conditional probability.
4) Random variables, distribution functions, discrete random variables, continuous random variables, expectation, variance. Bernoulli distribution, Binomial distribution, Geometric distribution, Poisson distribution, Normal distribution.

4. TEACHING METHODS - ASSESSMENT

MODE OF DELIVERY	Lectures in the classroom
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY	Power Point Presentations. MS EXCEL. Moodle e-learning platform.
TEACHING METHODS	

Method description	***Semester Workload***
Lectures	39
Problem Solving using the MS EXCEL	13
Personal Study	128
Total	***180***

ASSESSMENT METHODS	Written Examination 100%.

5. RESOURCES

- Recommended Book Resources:

1. Element of Statistics I: Descriptive Statistics and probability, Stephen Bernstein, Schum's outlines.
2. Roussas, G. (2003). An Introduction to Probability and Statistical Inference, Academic Press.
3. Wackerly, Dennis D, William Mendenhall, and Richard L. Scheaffer, Mathematical Statistics with Applications. Belmont, CA: Thomson Brooks/Cole, 2008.