

COURSE OUTLINE

1. GENERAL

SCHOOL	ENGINEERING		
DEPARTMENT	PRODUCT AND SYSTEMS DESIGN ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	2001	SEMESTER	3 rd
COURSE TITLE	Probability - Statistics		
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	
Lectures	4	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>	General Background		
PREREQUISITE COURSES:	NONE		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK		
COURSE DELIVERED TO ERASMUS STUDENTS	NO		
MODULE WEB PAGE (URL)	https://eclass.uowm.gr		

2. LEARNING OUTCOMES

Learning outcomes
The purpose of this course is to introduce the students to the Probability theory and the statistical data processing resulting from surveys. In this course students acquire knowledge which is necessary to understand issues in the field of probabilities and statistics. Students using statistical methods are able to describe samples arising from surveys, identify the framework of research results, recognize and choose appropriate statistical methods for their research data. They can develop appropriate methods of collecting and statistical processing of research data. In addition, they can evaluate the results and conclusions of a survey and to compare statistical results from various surveys.
General Skills
Upon successful completion of the program students will:
<ul style="list-style-type: none"> • have the theoretical and practical background on the field of Industrial Design and the corresponding profession. • apply a wide range of scientific and technical knowledge concerning the design and development of industrial products.

3. COURSE CONTENTS

Basic concepts of statistics. Measuring scales - variable categories. Description of quality data. Charts - Frequency Tables - Percentages. Crosstabs Tables. Description of quantitative data. Data grouping. Histograms. Numeric descriptive measures. Chebyshev inequality. The normal distribution. Confidence intervals. Statistical Conclusion. Testing for the mean of a population. Testing for the means of two populations (independent samples, paired samples). Combinatorics. Probability theorems. Conditional Probability. Distributions of continuous and distinct random variables.
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4. TEACHING METHODS - ASSESSMENT

MODE OF DELIVERY	In class, face to face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	<ul style="list-style-type: none"> • Video and slide presentations via projector • Support of teaching process via the electronic platform e-class 	
TEACHING METHODS	<i>Activity</i>	<i>Semester workload</i>
	Lectures	50
	Laboratory exercises	50
	Semester project	30
	Non-directed study	20
	Course total	150
ASSESSMENT METHODS	<ol style="list-style-type: none"> 1. Final written exam which includes: <ol style="list-style-type: none"> a. Short-answer questions b. Multiple choice questions c. Problem solving 2. Semester project 3. Laboratory exercises 	

5. ATTACHED

-Προτεινόμενη Βιβλιογραφία :

1. Γεωργιακόδης, Φ.Α. & Τριανταφύλλου, Ι. (2010). Στοιχεία πιθανοτήτων και στατιστικής στην επιστήμη των υπολογιστών. Αθήνα Σταμούλη.
2. Fourastié, J. & Laslier J.-F. (2001). Πιθανότητες και Στατιστική. Αθήνα: Πατάκη
3. Spiegel, M. R. (1977). Πιθανότητες και Στατιστική.
4. Σαρηγιαννίδης, Ν. & Κοντέος, Γ. (2016). Εισαγωγή στη Στατιστική, Θεσσαλονίκη.
5. Olivier, M. (2008). Η Ανάλυση Ποσοτικών Δεδομένων (Μετ. & επιμ. Αθανασιάδης, Η.), Αθήνα: Τόπος
6. Wright, B. D. & Stone, M.H. (2004). Making Measures. Chicago: The Phaneron Press

-Συναφή επιστημονικά περιοδικά:

1. Communications in Statistics - Theory and Methods. Taylor and Francis.
2. Journal of Applied Statistics. Taylor and Francis.
3. Probability in the Engineering and Informational Sciences. Cambridge University Press. Elsevier.