COURSE OUTLINE

1. GENERAL

SCHOOL	ENGINEERING		
DEPARTMENT	PRODUCT AND SYSTEMS DESIGN ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	4003	**SEMESTER**	8th
COURSE TITLE	DISCRETE MATHEMATICS		

INDEPENDENT TEACHING ACTIVITIES *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*	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures	**3**	**6**
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Special Background
PREREQUISITE COURSES:	Secondary Class Mathematics
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK/ENGLISH
COURSE DELIVERED TO ERASMUS STUDENTS	YES
MODULE WEB PAGE (URL)	https://eclass.uowm.gr/

2. LEARNING OUTCOMES

Learning outcomes
The purpose of this course is to present the Discrete Mathematical Knowledge necessary to examine problems related with the science of Design and Systems Engineering.   **On successful completion of this module the learner will be able to:**   1. To understand the basic Discrete Mathematical concepts and processes.   2. To be familiar with the usage of Discrete Mathematical techniques to investigate problems related with the scientific subject of the Department.   3. To be able applying the obtain Knowledge to concrete problems.

General Skills
Upon successful completion of the program students will: • To be able applying an extensive mathematical knowledge concerning the designing and development of industrial products.

3. COURSE CONTENTS

• Sets, Functions   • *Semirings*   • Order and equivalence relations.   • Logical Diagrams, Automata, Trees, Propositional Calculus, Error correcting codes.

4. TEACHING METHODS - ASSESSMENT

MODE OFDELIVERY	1. THEORY In class, face to face 2. Remote teaching
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	• Support of teaching process via the electronic platform e-class
TEACHING METHODS	<table><tr><td>*Activity*</td><td>*Semester workload*</td></tr><tr><td>Lectures</td><td>50</td></tr><tr><td>Tuition exercises</td><td>50</td></tr><tr><td></td><td></td></tr><tr><td>Non-directed study</td><td>50</td></tr><tr><td>Course total</td><td>**150**</td></tr></table>
ASSESSMENT METHODS	1. THEORY: Final written examination at the end of the semester.

5. ATTACHED

- Suggested bibliography:

- Kenneth H. Rosen, Discrete Mathematics and its Applications, MacGraw Hill Education

- Susanna S. Epp, Discrete Mathematics with Applications, Cengage Learning 2010.

- Related academic journals: