INSTITUTION	NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS					
SCHOOL	SCHOOL OF SCIENCE					
DEPARTMENT	INFORMATICS AND TELECOMMUNICATIONS					
COURSE LEVEL	UNDERGRADUATE					
COURSE TITLE	**Discrete Mathematics**					
COURSE CODE	K09		Semester	1	ECTS	7
TEACHING HOURS per week	THEORY	4	SEMINAR.	2	LABORATORY	
COURSE TYPE	**Select one of the following and delete the rest** Compulsory (YM)					
URL	https://eclass.uoa.gr/courses/D268/					
EXPECTED PRIOR KNOWLEDGE/ PREREQUISITES AND PREPARATION:	--					
TEACHING AND EXAMINATIONS LANGUAGE:	GREEK					
THE COURSE IS OFFERED TO ERASMUS STUDENTS	NO					

COURSE CONTENT
Introduction to the following concepts: Sets, Mathematical logic and iduction, *binary relations, functions, combinations and permutations, discrete probability distributions, conditional probability, independent events, Bayes theorem, asymptotic behavior of arithmetic functions. Seminar exercises are given as well as a final test.*

STUDENT LEARNING OBJECTIVES
Teaching-Learning Goals-Expected Learning Outcomes Upon successful completion of the course the student will be able to: • Describe and explain problems in set theory and function theory. • Choose appropriate techniques for solving discrete math questions using combinatorics, discrete probability, induction, pigeonhole principle, inclusion-exclusion principle. • Construct methods for solving problems in enumeration of discrete objects. • Evaluate algorithm performance based on their asymptotic complexity.

COURSE SYLLABUS

DEPARTMENT OF
INFORMATICS &
TELECOMMUNICATIONS

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
Εθνικόν και Καποδιστριακόν
Πανεπιστήμιον Αθηνών
ΙΔΡΥΘΕΝ ΤΟ 1837

TEACHING AND LEARNING METHODS - ASSESSMENT

TEACHING METHOD	In Class (Face to Face)
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Learning process supported by the e-class platform, specifically Lecture material, Discussions, Announcements, Exercises solved, and Student groups. Email communication Live transmission of lectures with presentation. Ability to track recorded lectures Utilization of educational environments (https://eclass.uoa.gr/courses/D268/)

TEACHING ORGANIZATION
Describe in detail the way and methods of teaching:
Enhanced Lectures,
Online Lectures,
Seminars,
Tutorial,
Laboratory,
Laboratory Exercise,
Study & analysis of literature,
Practice (Positioning),
Interactive teaching,
Developing a project,
Individual / group work
Telework (reference to tools) etc.

Details of the student's study hours for each learning activity and hours of non-guided study are shown to ensure that the total workload at the semester corresponds to the ECTS

Activity	*Student Workload (hours)*
Lectures	52
Tutorial	13
Teamwork in a case study	10
Small individual exercises	20
Independent Study	80
Total Course	*150*

ASSESSMENT OF STUDENTS
Description of the assessment process

Assessment Methods, Formative or Concluding, Multiple Choice Test, Quick Response Questions, Test Development Questions, Problem Solving, Written Work, Report / Report, Oral Examination, Public Presentation, Laboratory Work, Other / Other

Fully defined evaluation criteria are mentioned and if and where they are accessible to students.

Students evaluation tools by final written exam. Seminar tests weighted by 10%. Solutions discussed in class with student participation (oral). Re-grading possible after meeting and discussion with student.

Assessment methods	*Number*	*Percentage*
Written examination	1	90%
Seminar exercises	4	10%

LITERATURE AND STUDY MATERIALS / READING LIST

- K.H. Rosen. *Discrete Mathematics and its Applications (6th Edition).* McGraw-Hill, 2007.
- C.L. Liu. Elements of Discrete Mathematics. Crete University Press, 2003.
- L. Kirousis, C. Bouras, P. Spiraki. Discrete Mathematics with Applications. Gutenberg, 2004.
- H. Cormen, E. Leiserson, R.L. Rivest, C. Stein. Introduction to Algorithms. Crete University Press.