COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF SCIENCES		
ACADEMIC UNIT	DEPARTMENT OF MATHEMATICS		
LEVEL OF STUDIES	UNDERGRADUATE PROGRAM		
COURSE CODE		**SEMESTER**	**H**
COURSE TITLE	DATABASES I		
INSTRUCTOR			

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**CREDITS**
	4	6

COURSE TYPE	Special background
PREREQUISITE COURSES:	NO
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES
COURSE WEBSITE (URL)	http://www.math.aegean.gr/index.php/en/academics/undergraduate-programs

(2) LEARNING OUTCOMES

Learning outcomes
The student that will complete successfully the course is expected that will be in position to: • Analyze the requirements and design a database • Apply the principles of conceptual and logical modeling and designing of databases • Implement SQL queries in a database management systems • Design well structured databases based on the normalization rules • Understand the cost of processing a query on a database.
General Competences
Working independently. Team work. Working in an interdisciplinary environment.

(3) SYLLABUS

Introduction to Database Management Systems (DBMS). Databases. Database users. Advantages of using a DBMS. Schemas and instances. DBMS architecture. The principle of data independence. The entity-relationship, the relational and the object-relational model. Integrity constraints. Database update operations. Database languages. Relational algebra. Tuple and domain relational calculus. The QBE language. SQL as a query language: queries, views, update statements. Introduction to primary file organizations and indexes. Presentation of commercial DBMSs.

TEACHING MATERIAL DISTRIBUTION	The teaching material of the course is uniformly distributed during the semester.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Face-to-face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	Communication with students via e-mail	
TEACHING METHODS	***Activity***	***Semester workload***

	Lectures	52
	Independent study	98
	Course total (25 per ECTS)	***150***
COURSE COMMITMENTS	Attending course is not obligatory.	
STUDENT PERFORMANCE EVALUATION	Student's evaluation is done in Greek through a written examination which includes short-answers questions and problem solving. For students with disabilities, evaluation takes place via oral exam.	

(5) ATTACHED BIBLIOGRAPHY

1. Συστήματα Βάσεων Δεδομένων - 2η Έκδοση, Απόστολος Ν. Παπαδόπουλος - Θεόδωρος Τζουραμάνης - Αναστάσιος Γούναρης - Ιωάννης Μανωλόπουλος.
2. Θεμελιώδεις Αρχές Συστημάτων Βάσεων Δεδομένων, Elmasri Ramez, Navathe Shamkant B.
3. Συστήματα Διαχείρισης Βάσεων Δεδομένων, 3η Έκδοση, Ramakrishnan Raghu, Gehrke Joahannes.