COURSE OUTLINE

1. GENERAL

SCHOOL	APPLIED ECONOMIC AND SOCIAL SCIENCES
ACADEMIC UNIT	AGRIBUSINESS AND SUPPLY CHAIN MANAGEMENT
LEVEL OF STUDIES	*Undergraduate*

COURSE CODE	ICT205	**SEMESTER**	2nd

COURSE TITLE	DATA BASE MANAGEMENT

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures	3	5
Laboratory exercises	2	

COURSE TYPE	Background
PREREQUISITE COURSES	No
LANGUAGE OF INSTRUCTION and EXAMINATIONS	Greek
IS THE COURSE OFFERED for ERASMUS STUDENTS?	YES (in English)
COURSE WEBSITE (URL)	https://oeclass.aua.gr/eclass/courses/413/

2. LEARNING OUTCOMES

Learning Outcomes

The scope of the course is to help students to:
- Familiarize with the concepts of Database Technology
- understand the usefulness of Database Management Systems (DBMS)
- understand the database design rules
- understand the operations of Relational Algebra for managing relational data model relationships
- understand the SQL commands for creating and managing databases
- explore the functioning of DBMSs through problem solving exercises

Upon successful completion of the course the student will be able to:
- analyze problems in their basic entities and detect their relationships
- design entity-relationships diagrams that meet the requirements of specific applications
- convert an entity-relationships diagram to a relational database schema
- design a normalized relational database schema
- create expressions of Relational Algebra
- create SQL commands
- implement relational database schemas in a DBMS

General Competences
- Adapting to new situations
- Decision-making
- Working independently
- Teamwork

3. SYLLABUS

The theoretical part of the course covers the following topics:
1. Introduction to Databases and Database Management Systems (DBMS)
2. DBMS Architecture
3. Relational DBMS and Levels of Abstraction
4. Entity-Relationship Model
5. Relational model
6. Relational Algebra
7. SQL: Introduction, Standards, Basic commands
8. SQL: More commands, Functions
9. Converting Entity-Relationship Diagrams into Relational Database schema
10. Normalization
11. Complex Examples (A)
12. Complex Examples (B)
13. New Trends in Databases.

The laboratory part of the course covers the following topics:
- Getting acquainted with a software tool for Database Management
- Designing Tables, entering/deleting/modifying data
- Editing Tables, data types, validation rules
- Linking Tables / Creating Relationships
- Designing and processing of Queries
- Designing and editing Forms
- Designing and editing Reports
- Creating Macros

A combination of teaching and learning methods will be used, aiming at the active participation of the students and the practical application of the thematic units under examination; there will also be lectures using audiovisual media, discussions, experiential (group) activities, as well as projections of relevant videos. Furthermore, articles, audiovisual lecture materials, web links/addresses, useful information, case studies and exercises for further practice are posted in digital form on the AUA Open e-Class platform.

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Face -to-face, Distance learning
USE OF INFORMATION and COMMUNICATIONS TECHNOLOGY	- Support of the learning process through the University's AUA Open eClass platform (integrated e-Course Management System) - Support of lectures using presentation software - Use of audiovisual material - Use of web applications **Communication with students**: face to face at office hours, email, eclass platform
TEACHING METHODS	

Lectures (direct)	39
Laboratory Practice	26

	Essay Writing	0	
	Autonomous study	36	
	Advisory Support	0,5	
	Examination	2	
	Laboratory Examination	2	
	Total *(About 25 hours of study per ECTS)*	**105,5**	

STUDENT PERFORMANCE EVALUATION	The evaluation process is in the language that the course is taught (Greek or English) and consists of: Compulsory written final examination at the end of the semester (weighting factor **70**% at least) which may includes: • Multiple choice questionnaires • Open-ended questions • Problem solving • Oral examination **Evaluation criteria:** correctness, completeness, clarity **Special learning difficulties:** Students with **special learning difficulties** in writing and reading (as they are certified and characterized by a competent body) are examined based on the procedure provided by the Department. **Specifically-Defined Criteria:** The evaluation criteria are made known during the first lesson and are clearly stated on the course website and the AUA Open e-class platform. The students are allowed to see their exam paper after its grading (during the announced office hours) and receive explanations about the grade they received.

5. ATTACHED BIBLIOGRAPHY

Bibliography (in Greek):
- Σχεσιακές βάσεις δεδομένων, Κεχρής Ευάγγελος, 3η έκδ./2021, ΕΚΔΟΣΕΙΣ ΚΡΙΤΙΚΗ ΑΕ
- Σχεσιακές Βάσεις Δεδομένων, Χρήστος Σκουρλάς, Έκδοση: 1η/2000, ΕΚΔΟΣΕΙΣ ΝΕΩΝ ΤΕΧΝΟΛΟΓΙΩΝ ΙΚΕ
- Βάσεις Δεδομένων: Σύγχρονη Διαχείριση, 11 Έκδοση, Hoffer J., Ramesh V., Topi H. , Μιχαήλ Βαΐτης - Ευαγγελία Καβακλή (επιμέλεια), Έκδοση: 11η/2017, ΕΚΔΟΣΕΙΣ Α. ΤΖΙΟΛΑ & ΥΙΟΙ Α.Ε.
- Database Systems, https://repository.kallipos.gr/handle/11419/8413
- Εισαγωγή στην SQL, https://repository.kallipos.gr/handle/11419/6247