



**AMERICAN UNIVERSITY
OF CYPRUS**

Course Code MSE 471	Course Name Databases 2	ECTS Credit 7.5
Pre-Requisite CS310	Course Type Major Elective	Language of Instruction English
Year of Study 4 th / 7 th	Level of Course BSc/1st Cycle	Mode of Delivery On Campus

Course Objectives:

The purpose of the course is to present the necessary concepts for students to be able to design and implement complex database systems using modern tools and techniques in a constantly changing competitive environment.

Learning Outcomes

Upon successful completion of the course, students will be able to:

- Use key database technology tools and Database Management Products
- Implement engineering and implementation techniques for complex databases and use well-known SBAs to implement complex databases
- Understand the differences in known DBMS in transactions and in database management
- Understand how to use views in database system applications
- Analyze business rules to design complex databases
- Choose the SBA that is appropriate for the “real” problem they have to deal with

Teaching Methodology:

Lectures 42 hours

Labs 30 hours

Course Content

Functional dependencies and normalization.

Data Semantics Model Enhanced Entity Model –

Correlations, Object-Oriented Data Model,

Oracle technology (PL / SQL, triggers, stored procedures, etc.)

Open Source Database Management Systems

Comparative presentation of Database Management Products in transaction processing

Comparative presentation of Database Management Products in Database Administration

Back up database and database recovery

Concurrency synchronization in multi-user environments,

Optimization of query optimization.

Distributed databases.

Up-to-date database issues (media bases, web databases, database security, knowledge and database management and knowledge, XML, OLAP, Data Warehouse, etc.)

Case study.

Assessment Methods:

Final Exam

Mid-Term/Lab Exam

Assignments

Required Textbooks/Reading:

Title	Author(s)	Publisher	Year
Database Systems – A Practical Approach to Design, Implementation and Management	T.M. Begg, C.E. and Strachan	Connonly A.D. Addison Wesley	2009
Oracle Database 11g PL/SQL Programming: Develop Robust, Database-Driven PL/SQL Applications	Michael McLaughlin	McGraw-Hill Osborne Oracle Press Series	2008