

COURSE OUTLINE

1. GENERAL

SCHOOL	BUSINESS AND ECONOMICS		
DEPARTMENT	BUSINESS ADMINISTRATION		
DIVISION	BUSINESS ADMINISTRATION		
LEVEL OF STUDY	UNDERGRADUATE		
COURSE UNIT CODE	1108620	SEMESTER OF STUDY	6
COURSE TITLE	Data Bases		
COURSEWORK BREAKDOWN		TEACHING WEEKLY HOURS	ECTS Credits
Lectures, Workshops and Laboratory Exercises		5	6
COURSE UNIT TYPE	Special Background Course		
PREREQUISITES :	INTRODUCTION TO INFORMATICS AND COMPUTER PROGRAMMING		
LANGUAGE OF INSTRUCTION/EXAMS:	GREEK		
COURSE DELIVERED TO ERASMUS STUDENTS	YES		
MODULE WEB PAGE (URL)	http://moodle.teipir.gr/course/info.php?id=106		

2. LEARNING OUTCOMES

Learning Outcomes

The development of information Systems is based on Relational Data Bases Technology. This course covers the fundamentals of Relational Data Bases and presents in details the methodologies and techniques for designing and developing applications with the exploitation of Relational Data Base Management Systems. Also, the Structured Query Language is taught and applied.

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

- Describe the functions of Data Bases in enterprises or organizations and determine the usability for the data management.
- Explain and demonstrate how the data bases can be effectively used.
- Design data bases using the concepts of semantic, logical and physical design.
- Administrate and query data bases using SQL (Standard Query Language).
- Develop data base applications using the popular Relational Data Base Management Systems (SQL SERVER, ORACLE, MySQL, ACCESS).
- Develop interfaces for windows (client-server) and WEB (n-tier) linked to Data Bases.

General Skills

- Individual work
- Teamwork
- Search, analysis and aggregation of data and information with the utilisation of the required technology

3. COURSE CONTENTS

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Introduction to Data Base Systems

- File Based Applications
- Constraints of File Based Applications
- Data Bases and Data Base Management Systems (DBMS)
- Cons and Prons of DBMS

Fundamentals of Relational Data Bases

- Three Level architecture (ANSI-SPARC)
- Language for Data Bases
- Functions of data Bases
- Concepts of Relational Model Σχεσιακού Μοντέλου
- Relations in Data Bases
- Principles of Integrity
- Views

Normilisations

- Normalised data Base
- Steps of Normalisations
- Functional Dependency
- Principles of Normalisations
- Techniques

Case Studies of Data Bases Design

- The Life Cyrcler
- Semantic Design.
- Logical Design
- Physical Design
- Transactions Design

The Language SQL

- Introduction to SQL
- Data Definition Language and Data Manipulation Language
- the commands CREATE, ALTER, DROP TABLE
- The command SELECT and its applications
- The join in SQL
- Views with SQL
- The commands UPDATE and DELETE
- the commands GRANT and REVOKE
- Applications

Integrity management

- Data Base Administration
- Integrity Management
- Recovery

Case Studies

The practical part of the course includes teaching of a Relational Data Base Management Systems (MS ACCESS, SQL Server, ORACLE, MySQL) and the development of an integrated Systems in one of the above mentioned RDBMS.

4. TEACHING METHODS - ASSESSMENT

MODE OF DELIVERY	In-Class
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USE OF INFORMATION AND COMMUNICATION TECHNOLOGY	Support of the learning process through the LMS platform of PUAS.## Develop Data Base Application in MS ACCES or SQL Server DBMS Use of MS VISIO or Rational Rose tools for Data Base Design.	
TEACHING METHODS	Method description	Semester Workload
	Lectures	39
	Lab Exercises	26
	Preparation of Group Project	25
	Preparation of Individual Project	20
	Independent and Directed Learning	40
	TOTAL	150
ASSESSMENT METHODS	<p>I. Final Examination (60%) (Summative Evaluation) includes:</p> <ul style="list-style-type: none"> - Multiple choice questions - Short answer questions - Problems concerning the design and development of Data Base applications <p>II. Group Project (30%) (Summative Evaluation): Course Work in groups of 2 or 3 students. <u>Evaluation Criteria:</u></p> <ul style="list-style-type: none"> • Completeness - 35% • Clearness - 25% • Documentation - 30% • Critical Evaluation- 10% <p>III. Individual Project (10%) (formative) Development of a Data Base in the Laboratory</p>	

5. RESOURCES

- Recommended Book and Journal Article Resources:

- Elmasri, Ramez, Navathe, Shamkant B., Fundamentals of Data Base Systems, (in Greek)
- Connolly, Thomas M., Begg, Carolyn E., Data Base Systems (in Greek)

-Journals:

- Journal of Data Base Management, IGI GLOBAL
- International Journal of Intelligent Information and Data Base Systems, INDERSCIENCE Publishers.