

## COURSE OUTLINE

### 1. GENERAL

<b>SCHOOL</b>	BUSINESS, ECONOMY AND SOCIAL SCIENCES		
<b>DEPARTMENT</b>	BUSINESS ADMINISTRATION		
<b>LEVEL OF STUDY</b>	UNDERGRADUATE		
<b>COURSE UNIT CODE</b>		<b>SEMESTER OF STUDY</b>	6th
<b>COURSE TITLE</b>	Data Bases		
<b>COURSEWORK BREAKDOWN</b>		<b>TEACHING WEEKLY HOURS</b>	<b>ECTS Credits</b>
Lectures, Workshops and Laboratory Exercises		4	5
<b>COURSE UNIT TYPE</b>	Special Background course		
<b>PREREQUISITES :</b>	INTRODUCTION TO INFORMATICS AND COMPUTER PROGRAMMING		
<b>LANGUAGE OF INSTRUCTION/EXAMS:</b>	GREEK		
<b>COURSE DELIVERED TO ERASMUS STUDENTS</b>	YES		
<b>MODULE WEB PAGE (URL)</b>	<a href="http://moodle.uniwa.gr">http://moodle.uniwa.gr</a>		

### 2. LEARNING OUTCOMES

<b>Learning Outcomes</b>
<p>The development of Management information Systems is based on Relational Databases Technology. This course covers the fundamentals of Relational Databases and are presented in details the methodologies and techniques for designing and developing applications with the exploitation of Relational Data Bases Management Systems. Also, the Structured Query Language is taught and applied.</p> <p>Students will acquire the necessary theoretical and practical knowledge in order to :</p> <ul style="list-style-type: none"> <li>• Describe the functions of Database in enterprises or organizations and determine the usability for the data management.</li> <li>• Explain and demonstrate how the databases can be effectively used.</li> <li>• Design Database systems using the concepts of semantic, logical and physical design.</li> <li>• Administrate and query the DataBases using SQL (Stuctured Query Language).</li> <li>• Develop database applications using the popular Relational Data Base Management Systems (SQL SERVER, ORACLE, MySQL, ACCESS).</li> <li>• Develop interfaces for windows (client-server) and WEB (n-tier) linked to DataBases.</li> </ul>
<b>General Skills</b>
<ul style="list-style-type: none"> <li>- Individual work</li> <li>- Teamwork</li> </ul>

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

### 3. COURSE CONTENTS

#### Introduction to Data Bases Systems

- File Based Applications
- Constraints of File Based Applications
- Data Bases and Data Bases Management Systems
- Advantages and Disadvantages of Data Bases Systems

#### Fundamentals of Relational Data Bases

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

#### Normalisation

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

#### Data Bases Design

- The Life Circle  
/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

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

#### 5. RESOURCES

- Recommended Book and Journal Article Resources:

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

-Journals:

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