



<b>Course Code</b> MIS-253	<b>Course Title</b> Database Applications Development	<b>Credits (ECTS)</b> 6
<b>Department</b> MIS	<b>Semester</b> Fall, Spring	<b>Prerequisites</b> MIS-252
<b>Type of Course</b> Compulsory	<b>Field</b> MIS	<b>Language of Instruction</b> English
<b>Level of Course</b> 1 <sup>st</sup> Cycle	<b>Year of Study</b> 3 <sup>rd</sup>	<b>Lecturer</b> Vasso Stylianou
<b>Mode of Deliver</b> Face-to-face	<b>Work Placement</b> N/A	<b>Office</b> None

**Objectives of the Course:**

The main objectives of the course are:

- Review the concepts of relational databases and the principles of relational database design introduced in MIS-252.
- Apply data design and database engineering knowledge to design and develop database applications that include user interfaces, form design, data analysis, and data presentation.
- Apply database design knowledge to design the database tables and implement validation rules to ensure application integrity.
- Examine and develop advanced queries such as: top values, list of values, crosstab, find duplicates, and find unmatched.
- Design and build form and report interfaces. Connect database components using switchboards.
- Examine database security issues.
- Examine Access integration with other Office applications.
- Use Visual Basic for Applications (VBA) within macros and functions for additional functionality.

**Learning Outcomes:**

Students will be able to:

- Examine the information requirements and consider them in designing the desirable relational database.
- Use at least one conceptual data modeling technique (such as entity-relationship modeling) to capture the information requirements for an enterprise domain.
- Design high-quality relational databases.
- Implement a relational database design using an industrial database

- management system, including the principles of data type selection and indexing.
- Develop a complete database application to include queries, forms, reports, switchboards.
  - Consider database security issues.
  - Import and export data from the database.
  - Implement macros and functions using VB programming.

**Course Contents:**

- 1) A review of database terminology and fundamental concepts of relational database management systems.
- 2) Data modeling principles; review and practice.
- 3) Relational database design.
- 4) Implementation of relational databases using an industrial database management system.
- 5) Development of complete database applications.
- 6) Incorporating securing features.
- 7) Importing and exporting data.
- 8) Incorporating advance functionality features using macros and functions written in Visual Basic.

**Teaching Methods:**

Lectures, demonstrations, hands-on experience in the form of lab activities and homework assignments

**Assessment Methods:**

Project and other assignments, Class Participation, Midterm Exam, Final Exam

**Required Textbooks:**

Authors	Title	Publisher	Year	ISBN
Robert T. Grauer, Maurie Lockley	Exploring Microsoft Office Access 2007, Comprehensive	Prentice Hall	2008	978-0-131-56788-7

**Recommended Textbooks/Reading:**

Authors	Title	Publisher	Year	ISBN
Microsoft Official Academic Course	Microsoft Office Access 2007; Exam 77-605	Wiley & Sons Inc.	2008	978-0-470-16391-7 (Paperback with CD)
Denise M. Gosnell	Beginning Access 2007 VBA	Wiley & Sons Inc.	2007	978-0-470-04684-5
Joseph J. Adamski, Kathy Finnegan	New Perspectives on Microsoft Office Access 2007, Comprehensive	Course Technology Inc.	2007	978-1-4239-0589-9

