

Northern Marianas College
CURRICULUM ACTION REQUEST

Effective Semester / Session: Spring 2010

Type of Action:

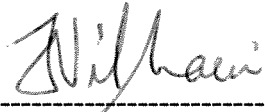
- New
- Modification
- Move to Inactive (Stop Out)
- Cancellation

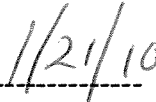
Course Alpha and Number: CS 140

Course Title: Database Applications I

Reason for initiating, revising, or canceling:

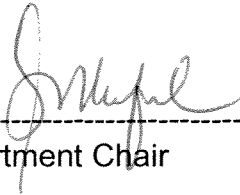
Beginning Spring 2010, MS Office 2007 will be installed in the computer classrooms in building W, and will be used in CS 140 Database Applications I, instead of the previous MS Office 2003 version. This course guide is being revised to update the two textbooks used in this course to newer editions that are consistent with MS Office 2007.





Proposer: Wil Maui, Instructor

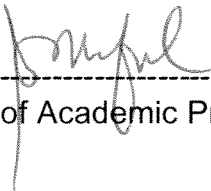
Date





Department Chair

Date





Dean of Academic Programs and Services

Date

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Course Guide

Course: CS 140 Database Applications I

1. Department

Business

2. Purpose

This course introduces students to the field of data management and database systems. It introduces terms and concepts and gives students knowledge and skills in creating a database and creating applications using Microsoft Access 2007. This course is required for the A.A.S. degree in Computer Applications and is an elective for the A.A.S. degree in Business Management. It will also benefit individuals who would like to gain knowledge and skills in creating a database.

3. Description

A. Required/Recommended Textbook(s) and Related Materials

Required:

Grauer, Robert T., Maurie Lockley, and Keith Mulbery. *Exploring Microsoft Office Access 2007, Comprehensive*. Upper Saddle River, NJ: Pearson Education, Inc., 2010.

Readability level: Grade 8.5

Kroenke, David M. and David J. Auer. *Database Concepts*. 4th ed. Upper Saddle River, NJ: Pearson Education, Inc., 2010.

Readability level: Grade 11

B. Contact Hours

1. **Lecture:** 3 hours per week / 45 hours per semester

2. **Lab:** Class is held in a computer classroom/lab

3. **Other:**

C. Credits

1. **Number:** 3

2. **Type:** Regular degree credits

D. Catalogue Course Description

This course introduces students to the field of data management and database systems. It introduces database terms and concepts and provides students with knowledge and skills to successfully create a database and create database applications. This course focuses on database implementation and creating applications. It covers basic Structured Query Language (SQL) and Query by Example using MS Access 2007. Prerequisite: CS 103. English Placement Level: EN 101. Math Placement Level: MA 132. (Offered Fall)

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E. Degree or Certificate Requirements Met by Course

This is a required course for the A.A.S. degree in Business Administration with an emphasis in Computer Applications, and an elective for the A.A.S. degree in Business Administration with an emphasis in Business Management.

F. Course Activities and Design

This course consists of class lectures, class exercises, homework assignments, and exams. Students also do a required group project creating a database application in Microsoft Access. The class and homework exercises cover different topics in business and other areas.

4. Course Prerequisite(s); Concurrent Course Enrollment; Required English/Mathematics Placement Level(s)

Prerequisite(s): CS 103

English Placement Level: EN 101

Math Placement Level: MA 132

5. Estimated Cost of Course; Instructional Resources Needed

Cost to the Student: Tuition for a 3-credit course, cost of textbook, and the student activities fee.

Cost to the College: Instructor's salary.

Instructional resources needed for this course include instructor's computer system, software, computer projector and projection screen, flash drive, whiteboard, whiteboard markers, photocopied handouts, and appropriate reference materials.

6. Method of Evaluation

Student grades will be based on the regular letter grade system as described below:

- A: Excellent – grade points: 4.0;
- B: Above average – grade points: 3.0;
- C: Average – grade points: 2.0;
- D: Below average – grade points: 1.0;
- F: Failure – grade points: 0.0.

NMC's grading and attendance policies will be followed.

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7. Course Outline

This is a topical outline and does not necessarily indicate the sequence in which the material will be presented.

1.0 Introduction to Database Management Systems

- 1.1 The reasons for using databases
- 1.2 The functions and components of database systems
- 1.3 The major steps in creating databases

2.0 The Relational Model

- 2.1 The conceptual foundation of the relational model
- 2.2 How relations differ from non-relational tables
- 2.3 Basic relational terminology
- 2.4 The meaning and importance of primary keys, foreign keys, and related terminology; understand how these keys represent relationships in relational database
- 2.5 The purpose and use of surrogate keys
- 2.6 The meaning of functional dependencies

3.0 Creating Tables and Forms in Access

- 3.1 Creating tables
- 3.2 Type of data and data properties
- 3.3 Setting primary keys for tables
- 3.4 Adding and deleting records in tables
- 3.5 Validating data
- 3.6 Creating forms
- 3.7 Entering bound, unbound, and calculated controls in forms
- 3.8 Including combo boxes and command buttons in forms
- 3.9 Using forms to add, delete and modify records in tables

4.0 Producing Information from Databases: Creating Reports and Queries

- 4.1 Creating various types of reports
- 4.2 Creating bound, unbound, and calculated controls in reports
- 4.3 Working with the different sections of reports
- 4.4 Creating and modifying queries
- 4.5 Using action and crosstab queries

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5.0 Proficiency in Database

- 5.1 Creating relationships in Access
- 5.2 Facilitating the retrieval of information using one-to-many relationships
- 5.3 Importing data into and exporting data from Access
- 5.4 Creating and modifying multiple-table select queries
- 5.5 Creating totals queries
- 5.6 Creating charts
- 5.7 Creating and modifying switchboards
- 5.8 Using Access database utilities: Compacting, repairing and converting databases

6.0 Relationships in Databases: One-to-Many

- 6.1 The importance of one-to-many relationships in databases
- 6.2 Implementing one-to-many relationships in Access
- 6.3 Creating and enforcing referential integrity in one-to-many relationships
- 6.4 Creating main forms with subforms
- 6.5 Creating queries based on multiple tables, then creating reports based on those queries

7.0 Structured Query Language (SQL)

- 7.1 Basic SQL statements for creating database structures
- 7.2 Basic SQL statements to add data to a database
- 7.3 Basic SQL statements to modify and delete data from a database
- 7.4 Basic SQL statements to modify and delete database tables and constraints

8.0 Building Database Applications

- 8.1 Creating and modifying switchboards
- 8.2 Associating tables in one database with objects in different databases
- 8.3 Using macros to automate applications
- 8.4 Using prototype to facilitate the development of applications
- 8.5 Creating and using macro groups

8. Instructional Goals

This course will introduce students to:

- 1.0 What a database system is, the role it plays, and its advantages as a component of an organization's information system;
- 2.0 The Relational Model's terms and concepts;

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- 3.0 Creating a relational database;
- 4.0 Creating applications to add data into and modify data in a database;
- 5.0 Creating applications to query and generate information from a database;
- 6.0 Using SQL commands to create tables and queries;
- 7.0 Using the Wizard (Query by Example) to create tables, queries, forms and reports; and
- 8.0 Creating a menu or switchboard to provide a user-friendly interface to maintain a database and produce information from a database.

9. Student Learning Outcomes

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

- 1.0 Describe the purpose of a database system and describe its advantages as an important component of an information system;
- 2.0 Demonstrate knowledge of the Relational Model's terms and concepts;
- 3.0 Create a relational database;
- 4.0 Create an application to add data into and modify data in a database;
- 5.0 Create an application to query and generate information from a database;
- 6.0 Use basic SQL commands to create tables and queries;
- 7.0 Use the Wizard (Query By Example) to create tables, queries, forms and Reports; and
- 8.0 Create a menu or switchboard to provide a user friendly interface to maintain the database and produce information from a database.

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10. **Assessment Measures**

Assessment of student learning may include, but not be limited to, the following:

- 1.0 Daily classwork;
- 2.0 Homework assignments;
- 3.0 In-class tests;
- 4.0 Take home tests; and
- 5.0 A class project.