

## **CIS 113 - Database Management**

**4 credits:** 3 lecture hours; 2 lab hours

**Prerequisites:** CIS 110 Computer Applications or CTN 110 Introduction to Information Technology

**Electives:** Satisfies Technology, Computer, Free

**Proficiencies:** None

**Attributes:** Computer Science Elective, Free Elective, Global Awareness Intensive, Public Presentation Intensive, Technical Elective, Technology Elective

**COURSE DESCRIPTION:** This is a comprehensive course in the use and application of computers using databases. The course covers all aspects of database design including entity relationship modeling, tables, reports, queries, forms and other database objects. In addition, students will gain a comprehensive understanding of database applications and some experience using Structured Query Language (SQL). It is highly recommended that students taking this course have MS Access© skills. Students must be prepared to use a Windows environment. Students will have access to this platform in all the campus labs.

**COURSE OBJECTIVES & OUTCOMES:** This course builds students' intermediate-to-advanced skills in Access 2016 and the integration of other software applications, and helps develop critical thinking and decision-making skills. This course is a case-based, certification approach and it aligns to Microsoft Office Specialist Objectives.

**Upon successful completion of this course the student's will:**

- Create databases to organize business or personal records
- Assess the information requirements, given a workplace scenario requiring the reporting and analysis of data and then prepare the materials that achieve the goal efficiently and effectively.
- Design the Structure of Table: Identify good database design, create a Table and Define Fields in a Blank Desktop Database. Change the structure of tables and add additional tables.
- Import Excel Data into a Database: Create a table that Excel can append records into. Create a table from an Excel spreadsheet.
- Create a Table Relationship: Build relationships, define a primary and secondary key
- Create relationships while enforcing referential integrity
- Create Queries: Build a variety of queries in design view. Query types focused on include: Numeric, Compound, Wildcard, Calculated, Statistical, Crosstab, Top Value, Find Duplicate, Unmatched, List of Values, Concatenate, and Parameter.
- Create and use Lookups, data validation rules, and validation text.
- Create and Enhance Forms: Create custom forms using design view, add combo boxes and command buttons, as well as add option groups.
- Plan, Design, and Create a Custom Form in Design View: Add combo boxes and calculated controls to a form and a subform.

- Create a form that houses a subform: Design a form/subform that utilizes calculated controls in the subform that display in the main form.
- Use the database splitter, encrypt and decrypt databases
- Create a locked and backend database.
- Write SQL statements: Create a query in SQL view, Modify a query in SQL view, Create union queries in SQL, Create Calculated fields and SQL aggregate functions.
- Use SQL to sort, omit duplicates and join tables.
- Use SQL to delete and update tables.

#### **REFERENCE MATERIALS:**

- *GO! With Microsoft Access 2016 Comprehensive* by Gaskin and Graviett ©2017, published by Pearson Education, Inc. ISBN 9780134443935. You may have difficulty finding the text, using this ISBN number, in locations other than the college bookstore. Instead, try searching for it, using the text's title that is noted above in italicized font.
- One is put on reserve in the Haverhill and Lawrence campus libraries. The book **cannot** be removed from the library; however, it can be used in the library, while working on a computer.

**Please email Professor Ethel Schuster [eschuster@necc.mass.edu](mailto:eschuster@necc.mass.edu) or Professor Joanne Ronsivalli [jronsivalli@necc.mass.edu](mailto:jronsivalli@necc.mass.edu) with any questions you have regarding this Challenge exam**