

Master Course Record Form

Course Prefix and Number: IT 234
Course Title: Introduction to Data Analysis - Database Administration Fundamentals
Recommended Transcript Title: Database Administration Fundamentals
Date Approved/Revised
Credit Hours: 3 Contact hours per week (Based on 15 week term): Lecture: 3 Lab:
Prerequisite: RDG 100 or minimum acceptable test scores for placement in college-level English and CIS 114 or permission of Division Chair or instructor. Pre/Corequisite:
Grading Mode: Letter grade
Course Description: <p>This course covers databases and the role they play in information technology. It provides students with skills in relational databases, Structured Query Language (SQL), security requirements for data access and the role security plays in the integrity of the database. The student will gain knowledge in creating database objects such as tables and views. The concepts of Normal form and referential integrity will be covered. Database maintenance will be covered. Different career opportunities requiring database knowledge will be covered.</p>
Course Outcomes: <ol style="list-style-type: none"> A. Demonstrate ability in the .Net Framework when designing a database B. Demonstrate ability to design a relational database C. Demonstrate understanding of Transact SQL for database administration, insert, update, delete, and create. D. Demonstrate understanding Core Database Concepts E. Creating Database Objects F. Demonstrate techniques to manipulating data G. Demonstrate understanding Data Storage H. Demonstrate understanding of skill needed to administer a database I. Demonstrate understanding of the role of database skills in Information Technology careers.
Implementation Cycle: Fall/Spring
Role in College Curriculum: (Check all that apply) <input type="checkbox"/> General Education Core (Specify category) <input type="checkbox"/> Technical Core + Restricted Elective: AAS IT, CAS IT + General Elective <input type="checkbox"/> Workforce Education <input type="checkbox"/> Other (Please specify)
Course Fee: Yes

Course Number & Title: IT 234 Database Admin. Fundamentals
 Date Prepared/Revised: April 6, 2015
 Date Course Approved by LOT: April 20, 2015

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Instructor's Qualifications: Bachelor's degree in information technology with two years of related work experience in IT field or master's degree with 18 graduate hours in IT.

Expanded Course Description:

This course is aligned to the Microsoft Technology Associate Exam: Windows Database Administration Fundamentals: MTA Exam 98-364.

- A. Demonstrate ability in the .Net Framework when designing a database
- B. Demonstrate ability to design a relational database
- C. Demonstrate understanding of Transact SQL for database administration, insert, update, delete, and create.
- D. Demonstrate understanding Core Database Concepts
 - Understand how data is stored in tables
 - Understand what a table is and how it relates to the data that will be stored in the database; columns/fields, rows/records
 - Understand relational database concepts
 - Understand what a relational database is, the need for relational database management systems (RDBMS), and how relations are established
 - Understand data manipulation language (DML)
 - Understand what DML is and its role in databases
 - Understand data definition language (DDL)
 - Understand how T-SQL can be used to create database objects, such as tables and views
- E. Creating Database Objects
 - Choose data types
 - Understand what data types are, why they are important, and how they affect storage requirements
 - Understand tables and how to create them
 - Purpose of tables; create tables in a database by using proper ANSI SQL syntax
 - Create views
 - Understand when to use views and how to create a view by using T-SQL or a graphical designer
 - Create stored procedures and functions
 - Select, insert, update, or delete data
- F. Demonstrate techniques to manipulating data
 - Select data
 - Utilize SELECT queries to extract data from one table, extract data by using joins, combine result sets by using UNION and INTERSECT
 - Insert data
 - Understand how data is inserted into a database, how to use INSERT statements
 - Update data

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<ul style="list-style-type: none">▪ Understand how data is updated in a database and how to write the updated data to the database by using the appropriate UPDATE statements and update by using a table• Delete data<ul style="list-style-type: none">▪ Delete data from single or multiple tables, ensure data and referential integrity by using transactions <p>G. Demonstrate understanding Data Storage</p> <ul style="list-style-type: none">• Understand normalization<ul style="list-style-type: none">▪ Understand the reasons for normalization, the five most common levels of normalization, how to normalize a database to third normal form• Understand primary, foreign, and composite keys<ul style="list-style-type: none">▪ Understand the reason for keys in a database, choose appropriate primary keys, select appropriate data type for keys, select appropriate fields for composite keys, understand the relationship between foreign and primary keys• Understand indexes<ul style="list-style-type: none">▪ Understand clustered and non-clustered indexes and their purpose in a database <p>H. Demonstrate understanding of database administration and maintenance</p> <ul style="list-style-type: none">• Understand database security concepts<ul style="list-style-type: none">▪ Understand the need to secure a database, what objects can be secured, what objects should be secured, user accounts, and roles• Understand database backups and restore<ul style="list-style-type: none">▪ Understand various backup types, such as full and incremental, importance of backups, how to restore a database <p>I. Demonstrate understanding of the role of database skills in Information Technology careers.</p>

Prepared by: Vincenza Cumbo

April 6, 2015

Signature, Title

Date

Approved by:

Dean, Academic & Student Services

Date