

Virginia Western Community College

ITD 250

Database Architecture and Administration

Prerequisites

ITD 130

VCCS Course Description

Involves in-depth instruction about the underlying architecture of databases and the handling of database administration.

Semester Credits: 3

Lecture Hours: 3

Required Materials

Textbook

Murach's SQL Server 2022 for Developers, Joel Murach, ISBN- 978-1-943873-06-7.

Other Required Materials:

SQL Server current version (free download from the web)

VCCS COURSE OUTCOMES

At the completion of this course, the student should be able to:

- Understand how to use SQL Server Management Studio
- Be able to retrieve data from single and multiple tables, so summary queries, utilize “group by” and “having
- Use subqueries to retrieve data from multiple tables
- Understand how to update and delete tables and data
- Understand data types, functions, null values
- Be able to design databases (both logical and physical) and understand modeling and normalization
- Make correct use of indexes, views and the system information
- Know how to code scripts
- Be able to create stored procedures, and user defined functions
- Be able to utilize triggers
- Understand cursors, transactions, and locking
- Be able to discuss and implement security and concurrency control
- Understand how to Performance tune a database utilizing the query optimizer
- Know the basic topics related to database backup, recovery, system availability.

- Understand the need for data replication. Be able to automate system administration tools.
- Be able to discuss the concepts of distributed processes, business intelligence, data warehousing

Note to Instructors

1. A midterm and final exam are expected.
2. Optional topics include some MySQL and Oracle database administration

[TITLE IX STATEMENT](#)

[ADA STATEMENT](#)