

PALOMAR COLLEGE
COURSE OUTLINE OF RECORD FOR
DEGREE CREDIT COURSE

X Transfer Course X A.A. Degree applicable course
(check all that apply)

COURSE NUMBER AND TITLE: CSIS 173 Microsoft SQL Server Databases

UNIT VALUE: 2

MINIMUM NUMBER OF SEMESTER HOURS: 40

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS

PREREQUISITE: NONE

COREQUISITE: NONE

RECOMMENDED PREPARATION: CSIS 196 or CSIS 252

SCOPE OF COURSE: This course provides students with the knowledge and skills necessary to design and implement database solutions by using Microsoft SQL Server Enterprise Edition.

SPECIFIC COURSE OBJECTIVES:

The student will:

1. Developing a Logical Data Model
2. Implementing the Physical Database
3. Retrieving and Modifying Data
4. Programming Business Logic
5. Tuning and Optimizing Data Access
6. Designing a Database Security Plan

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. SQL Server Overview
 - A. What Is SQL Server?
 - B. SQL Server Integration
 - C. SQL Server Databases
 - D. SQL Server Security
 - E. Working with SQL Server
- II. Overview of Programming SQL Server
 - A. Designing Enterprise Application Architecture
 - B. SQL Server Programming Tools
 - C. The Transact-SQL Programming Language
 - D. Elements of Transact-SQL
 - E. Additional Language Elements
 - F. Ways to Execute Transact-SQL Statement
- III. Creating and Managing Databases
 - A. Creating Databases
 - B. Creating Filegroups
 - C. Managing Databases
 - D. Introduction to Data Structures
- IV. Creating Data Types and Tables
 - A. Creating Data Types
 - B. Creating Tables
 - C. Generating Column Values
 - D. Generating Scripts
- V. Implementing Data Integrity
 - A. Types of Data Integrity
 - B. Enforcing Data Integrity
 - C. Defining Constraints
 - D. Types of Constraints
 - E. Disabling Constraints
 - F. Using Defaults and Rules

- G. Deciding Which Enforcement Method to Use
- VI. Planning Indexes
 - A. Introduction to Indexes
 - B. Index Architecture
 - C. How SQL Server Retrieves Stored Data
 - D. How SQL Server Maintains Index and Heap Structures
 - E. Deciding Which Columns to Index
- VII. Creating and Maintaining Indexes
 - A. Creating Indexes
 - B. Creating Index Options
 - C. Maintaining Indexes
 - D. Introduction to Statistics
 - E. Querying the sysindexes Table
 - F. Setting Up Indexes Using the Index Tuning Wizard
 - G. Performance Considerations
- VIII. Implementing Views
 - A. Introduction to Views
 - B. Advantages of Views
 - C. Defining Views
 - D. Modifying Data Through Views
 - E. Optimizing Performance by Using Views
 - F. Performance Considerations
- IX. Implementing Stored Procedures
 - A. Introduction to Stored Procedures
 - B. Creating, Executing, Modifying, and Dropping Stored Procedures
 - C. Using Parameters in Stored Procedures
 - D. Executing Extended Stored Procedures
 - E. Handling Error Messages
 - F. Performance Considerations
- X. Implementing User-defined Functions
 - A. What Is a User-defined Function?
 - B. Defining User-defined Functions

- C. Examples of User-defined Functions
- XI. Implementing Triggers
 - A. Introduction to Triggers
 - B. Defining Triggers
 - C. How Triggers Work
 - D. Examples of Triggers
 - E. Performance Considerations
- XII. Programming Across Multiple Servers
 - A. Introduction to Distributed Queries
 - B. Executing an Ad Hoc Query on a Remote Data Source
 - C. Setting Up a Linked Server Environment
 - D. Executing a Query on a Linked Server
 - E. Managing Distributed Transactions
 - F. Modifying Data on a Linked Server
 - G. Using Partitioned Views
- XIII. Optimizing Query Performance
 - A. Introduction to the Query Optimizer
 - B. Obtaining Execution Plan Information
 - C. Using an Index to Cover a Query
 - D. Indexing Strategies
 - E. Overriding the Query Optimizer
- XIV. Analyzing Queries
 - A. Queries That Use the AND Operator
 - B. Queries That Use the OR Operator
 - C. Queries That Use Join Operations
- XV. Managing Transactions and Locks
 - A. Introduction to Transactions and Locks
 - B. Managing Transactions
 - C. SQL Server Locking
 - D. Managing Locks

REQUIRED READING: Microsoft Official Curriculum – Programming a Microsoft SQL Server Database

SUGGESTED READING: None

REQUIRED WRITING:

Problem solving exercises and skills demonstrated in computer homework assignments. A minimum of one page per homework assignment is required.

OUTSIDE ASSIGNMENTS:

Students are expected to spend a minimum of three hours a week practicing the skills learned in class on their home machines. The midterm and final are both take home exams requiring at least 10 hours to complete.

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

- lecture
- laboratory
- lecture-laboratory combination
- directed study

DISTANCE LEARNING:

This course may be offered as a distance learning course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.

Yes No

If yes, check all that apply:

- Television Course (Video one-way, e.g. ITV, video cassette, etc.)
- Online Course (Text one-way, e.g. newspaper, correspondence, electronic file, etc.)
- Two-Way Video Conferencing (Two-way interactive video and audio)
- One-Way Video Conferencing (One-way interactive video and two-way interactive audio)
- Computer Assisted Instruction (A specialized form of mediated instruction relying primarily on student access to information and prepared lessons or teaching materials through a computer terminal, but not under immediate supervision of a qualified instructor.)

GRADING POLICY AND STANDARDS (include methods of determining whether the stated objectives have been met by students):

Grades for courses are based upon final examinations, mid-term examinations, other tests, assignments, projects, and participation. Faculty will inform students of their grading policy at the beginning of each semester.

IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?

Yes No Number of times course may be taken for credit: 1

If yes, identify specific provision of Title 5 Division 2 section(s), 55761-55763 and 58161 which qualifies course as repeatable:

CONTACT PERSON: Terrie Smith x2610

SIGNATURES:

SIGNATURES ON FILE