Montgomery County Community College
CIS 250
Advanced Database Programming
3-2-2

COURSE DESCRIPTION:
This course will introduce students to relational database management and development on the SQL Server platform. Although an overview of database design and optimization will be presented, the main topics pertain to developing databases on SQL Server software. The Transact-SQL language, querying and modifying data, indexing, optimization of data, joins and user defined functions (UDF) will be explored.

REQUISITES:
Previous Course Requirements

- CIS 244 PC Database Management Systems or CIS 245 Database Management Systems Using SQL, with minimum grade of "C"

Concurrent Course Requirements
None

LEARNING OUTCOMES Upon successful completion of this course, the student will be able to:	LEARNING ACTIVITIES	EVALUATION METHODS
1. Write database applications using SQL Server commands and interfaces.	Lecture Discussion Hands-On Lab Exercises Homework Assignments	Quizzes and Exams Hands-On Lab Exercises
2. Create a database design within the constraints of the SQL Server environment.	Lecture Discussion Hands-On Lab Exercises Homework Assignments	Quizzes and Exams Hands-On Lab Exercises
3. Enhance database query skills through the development of simple and complex joins and queries.	Lecture Discussion Hands-On Lab Exercises Homework Assignments	Quizzes and Exams Hands-On Lab Exercises

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
4. Design reusable applications quickly and efficiently through the use of user defined functions, stored procedures and programming triggers.	Lecture Discussion Hands-On Lab Exercises Homework Assignments	Quizzes and Exams Hands-On Lab Exercises Final project

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated results will be submitted to the Associate Vice President of Academic Affairs. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria*.

SEQUENCE OF TOPICS:

1. History of SQL Server
2. Overview of Database Design and Modeling
3. Transact-SQL Language Fundamentals
4. Tables and Views
5. Querying and Modifying Data
6. Joins
7. Indexes
8. Enforcing Data Integrity
9. Programming Stored Procedures
10. Programming Triggers
11. User Defined Functions (UDFs)
12. Complex Queries
13. Maintaining Data Consistency
    a. Transactions
    b. Locks
14. Transferring Data to/from SQL Server

LEARNING MATERIALS:

Dewson, Robin. *Beginning SQL Server 2012 for Programmers*. Apress, 2012. ISBN: 978-1430237501**.**

Other learning materials may be required and made available directly to the student and/or via the College's Libraries and/or course management system.

COURSE APPROVAL:

Prepared by:	Alan Evans	Date:	2/2002
Revised by:	Kathleen Kelly	Date:	7/12/2012
Revised by:	Kathleen Kelly	Date	2/20/2017

VPAA/Provost or designee Compliance Verification:

Victoria Bastecki-Perez, Ed.D. Date: 4/20/2017

This course is consistent with Montgomery County Community College's mission. It was developed, approved and will be delivered in full compliance with the policies and procedures established by the College.