CSC K233 Database Development I Syllabus

Class Format: Hybrid via Blackboard Learn (approximately half classroom and half online)

Hours: Lecture W 2:45 pm–4:25 pm (Room B/227)

Instructor: Allan Anderson
Private Contact Methods: Blackboard Learn Messaging (preferred) *or* aanderson@trcc.commnet.edu
(emergency only) for private (one-to-one) communications
Public Blackboard Discussions: all students and instructor communications on class topics – this is the primary class communication method outside of the classroom
Campus Office Hours: Wednesday (1:00 pm - 2:30 pm, 4:30 pm – 6:00 pm), other days/hours by appointment
Campus Office: Room C/106
Campus Phone: (860) 215-9403 (with voice mail)
Instructor Response Time Objectives: Electronic Messages - 48 hours (weekdays), 72 hours (weekends)
Discussion posts - 24 hours (weekdays), 48 hours (weekends)
Assignment grading – 1 week or less from due date (no assignments are graded before the due date)
Phone messages – 72 hours (weekdays), 96 hours (weekends)

Textbooks: Peter Rob and Carlos Cornel, *Database Systems: Design, Implementation, & Management 11e*, Course Technology Incorporated, 2015, 978-1-285-19614-5
Itzik Ben-Gan, *Microsoft SQL Server 2012 T_SQL Fundamentals,* Microsoft Press, 2012, 978-0-735-65814-1

Dates: Jan. 27th – May 16th,the Feb. 24th and Mar. 16th classes will be Blackboard only (no class meeting), other days may also be designated as Blackboard only. No class on Mar. 23rd

Software, Supplies and Materials: This course will specifically use the Microsoft SQL Server 2008 relational database software and will be made available to students in a VMware virtual machine image. Students will need the ability to start this image on their own computer by downloading and installing the free version of VMware Player. In addition other no-charge software may be required during the semester.

Withdrawing from the course: A student who simply stops submitting work will receive a grade based on the submitted work only which will usually be a failing grade. To receive a "W" grade instead, apply for a withdrawal through the registrar's office by May 9th. A "W" will be entered on the student transcript.

Academic Integrity: Students are expected to do their own work in this class. Working together to better understand the material is acceptable. Submitting duplicate work is not and will adversely affect the assignment grade. Actively participating in the discussion boards both to ask and to answer questions is expected of all students. Posting of detailed instructions for "how to" responses to questions is encouraged but posting of a complete solution is not. Example violations include but are not limited to:
o   Copying a file or any portion of a file from another student.
o   Sharing or allowing another student to copy your files or any portion of a file.
o   Duplicating or distributing copies licenses for software programs and/or services.

Class cancellations: as a hybrid class, any college delay or closing due to weather or other circumstances will have little to no impact on scheduled activities for this class. However, if there is an impact (such as a widespread power outage might cause), then your instructor will inform you of any changes to existing dates.

Students with Disabilities: If you are a student with a disability and believe you will need support services and/or accommodations for this class, please contact the Disabilities Support Services at TRCC. Please note that the instructor cannot provide accommodations based upon disability until the instructor has received an accommodation letter from the Disabilities Counselor.

Course Pace: Although there is flexibility in when the student works on this course, it is not self-paced. Assignments, with due dates, will be released throughout the semester. Quizzes/tests will be available immediately after assignments are due and are available for a limited time only.

Course Objectives:

- To provide the student with guidelines for appropriate electronic communication techniques in a business/academic environment and the opportunity to use these techniques for class activities throughout the semester. Specifically this will include Blackboard class announcements, discussions, messages, assignment submissions, and other techniques as appropriate. In addition, this will include the opportunity to use your TRCC online learning portfolio in Digication for certain class activities. Using appropriate sources and formulating effective writing strategies will be embedded in all writing activities
- To provide the student with knowledge of fundamental concepts underlying the current database technology, the relational database model. The course will solidify the concepts by using a specific Database Management System (DBMS), SQL Server, that employs the relational model, and by using its database query language, Transact SQL.
- Specifically at the course completion students will be able to describe, design and use relational database features including but not limited to the following:

Database Modeling	Database Querying
- Describe the difference between data and information, what a database is, the various types of databases, and why they are valuable assets for decision making - Understand the importance of database design - Describe data modeling and why data models are important - Describe what business rules are and how they influence database design - Understand that relations are logical constructs composed of rows (tuples) and columns (attributes) - List the main characteristics of entity relationship components - Describe the database design process - List the characteristics of good primary keys and understand how to select them - Understand what normalization is and what role it plays in the database design process - Learn about the normal forms 1NF, 2NF, 3NF, and BCNF - Understand how normal forms can be transformed from lower normal forms to higher normal forms	- Learn the basic commands and functions of SQL - Use SQL for data administration (to create tables, indexes, and views) - Use SQL for data manipulation (to add, modify, delete, and retrieve data) - Use SQL to query a database for useful information - Learn about the relational set operators UNION, UNION ALL, INTERSECT, and MINUS - Use the advanced SQL JOIN operator syntax - Design and use the different types of subqueries and correlated queries - Use SQL functions to manipulate dates, strings, and other data.

Homework Assignments: Weekly assignments from the end of chapter problems or from additional instructor handouts will be posted in Blackboard. The hand-in format will be via Blackboard Learn unless otherwise noted. Class assignments should be submitted on or before the due date and time. A late assignment will lose 10% of the score for that assignment if submitted late. No assignments will be accepted after the cutoff date. Assignments will be graded on professionalism, accuracy, style and completeness. The details for each assignment, including work to be done and the due date and cutoff date, will be posted. Students are encouraged to interact with the instructor or other students on these assignments via Blackboard Learn discussion boards but must personally perform the necessary actions to complete the assignments.

Grading and Evaluation Criteria:

30 % of the grade is based on chapter examinations
20 % of the grade is based on a final examination
40 % of the grade is based on homework assignments
10% of the grade is based on discussion (classroom and online) participation and an instructor designated assignment for submission as a General Education artifact using Digication

Final course grades will be assigned as objectively as possible, according to the following scale (a class curve may be used at the discretion of the instructor):

90 - 100%	A- to A
80 - 89%	B- to B+
70 - 79%	C- to C+
60 - 69%	D- to D+
59% and Below	F

Week	Topics	Rob/Cornel Text Assignments (assignments from the Ben-Gan text will be added)
1 2/2	Database Systems	Chapter 1 Chapter 1 problems
2 2/9	Data Models	Chapter 2 Chapter 2 problems
3 2/16	Chapter 1 & 2 Test The Relational Database Model	Chapter 3
4 2/23	The Relational Database Model	Chapter 3 Chapter 3 problems
5 3/1	Entity Relationship (ER) Modeling Background to T-SQL Querying and Prog.	Chapter 4 Chapter 4 problems Chapter 1(Ben-Gan)
6 3/8	Chapter 3 & 4 Test	
7 3/15	Introduction to Structured Query Language (SQL)	Chapter 7
8 3/29	Introduction to Structured Query Language (SQL)	Chapter 7 Chapter 7 problems
9 4/5	Chapter 7 Test	
10 4/12	Advanced SQL	Chapter 8
11 4/19	Advanced SQL	Chapter 8 Chapter 8 problems
12 4/26	Chapter 8 Test Advanced Data Modeling	Chapter 5 Chapter 5 problems
13 5/3	Chapter 5 Test Normalization of Database Tables	Chapter 6
14 5/10	Normalization of Database Tables Chapter 6 Test	Chapter 6 Chapter 6 problems
15 5/13		Final Exam

Note: The foregoing course outline will change as conditions warrant.