COURSE OUTLINE: CSD220 - DATABASE PROGRAM/SQL

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Course Code: Title	CSD220: DATABASE PROGRAMMING USING SQL
Program Number: Name	2090: COMPUTER PROGRAMMER 2091: COMPUTER - PROG/ANAL
Department:	COMPUTER STUDIES
Semesters/Terms:	19W
Course Description:	This course is a continuation of Database Design and Implementation I, where more advanced design and implementation of systems will be completed. A major focus of the course is on the physical implementation and manipulation of databases. More advanced SQL (Structured Query Language) will be used for processing and managing relational databases. The DBMS platform that will be used is MySQL. Database design/modeling will be revisited to ensure the student has grasped the major concepts taught in the previous course. The course will also extend the concepts of database management to include such topics as managing multi-user databases and data warehouse design.
Total Credits:	4
Hours/Week:	4
Total Hours:	0
Prerequisites:	CSD210
Corequisites:	There are no co-requisites for this course.
This course is a pre-requisite for:	CSD320
Vocational Learning Outcomes (VLO's) addressed in this course: **Please refer to program web page for a complete listing of program outcomes where applicable.**	**2090 - COMPUTER PROGRAMMER** VLO 2 Develop, test, document, deploy, and maintain secure program code based on specifications. VLO 3 Perform routine maintenance on a database. VLO 6 Use relevant methodologies, policies, and standards to develop secure program code.
Course Evaluation:	Passing Grade: 50%, D
Other Course Evaluation & Assessment Requirements:	EVALUATION PROCESS/GRADING SYSTEM: Evaluation Methods Weight Tests 60% Assignments 40% 100% The following semester grades will be assigned to students in postsecondary courses: Grade Definition Grade Point Equivalent

A+ 90 - 100% 4.00
A 80 - 89% 4.00
B 70 - 79% 3.00
C 60 - 69% 2.00
D 50 - 59% 1.00
F(Fail) below 50% 0.00

CR (Credit) Credit for diploma requirements has been awarded.
S Satisfactory achievement in field/clinical placement or non-graded subject area.
U Unsatisfactory achievement in field/clinical placement or non-graded subject area.
X A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
NR Grade not reported to Registrar`s office.
W Student has withdrawn from the course without academic penalty.

Books and Required Resources:	Database Concepts by David M. Kroenke and David J. Auer Publisher: Pearson Edition: 7th ISBN: 9780-0-13-354462-6

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
1. Review the concepts of database design/modeling taught in the previous course. This learning outcome will comprise approximately 10% of the course.	1.1 identify entities and allocate attributes to them 1.2 assign primary/unique identifiers to entities 1.3 understand how entities and relationships are represented 1.4 understand and apply cardinalities 1.5 understand and apply the following types of relationships i) one-to-one ii)one-to-many iii) many-to-many 1.6 understand how user views are related and combined to form an overall database design 1.7 create a database design/model and implement its physical representation
Course Outcome 2	**Learning Objectives for Course Outcome 2**
2. Discuss and apply the more advanced concepts related to SQL (Structured Query Language) using MySQL. (Kroenke: chapters 3 and lecture notes) This learning outcome will comprise approximately 75% of the course.	2.1 Apply the concepts of joins and sub-queries by being able to: - create a join based upon conditions - create a join which joins a table to itself (self-join) - create a join that includes non-matching rows (outer join) - create a join of more than two tables - create a query with multiple levels - create a sub-query with comparison operators - create a sub-query for an existence test 2.2 Apply the concepts of data definition and manipulation by being able to: - create a table from an existing table - insert data into a table - update data in a table - delete data from a table - incorporate advanced data definition commands 2.3 Apply the concepts of data control by being able to: - control access to the server, a database, commands, and

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objects
- create and use views to control access
- update tables via views
- create rules, defaults, and constraints
- apply triggers to control updates

2.4 Apply the more advanced concepts of MySQL Server by being able to:
- describe and use stored procedures
- explain and write transactions
- create users and assign access privileges
- explain and use backup and restore procedures on a database

Course Outcome 3	Learning Objectives for Course Outcome 3
3. Understand the role of data/database management with respect to multi-user database processing and learn techniques for controlling the consequences of concurrent data access. (Kroenke: chapter 6 and lecture notes) This learning outcome will comprise approximately 10% of the course.	Elements of the performance: 3.1 identify problems caused by concurrent processing 3.2 explain methods to prevent loss of updates and the deadly embrace 3.3 define the terms, logical transaction, before/after images, rollback/rollforward 3.4 describe the problems related to database recovery 3.5 explain methods for recovery after certain types of system failures 3.6 describe the problems associated with database security and how database management software handles security implementation 3.7 explain and implement object-oriented and subject-oriented security. understand client/server computing 3.8 understand the advantages of client/server systems 3.9 understand how client/server systems evolved 3.10 describe the components of a client/server system 3.11 understand how client0/server systems might be introduced into an organization 3.12 understand the factors that affect the implementation of client/server systems
Course Outcome 4	Learning Objectives for Course Outcome 4
4. Understand how a data warehouse is used to provide decision-support personnel with historical data needed for trend analysis. (Kroenke: chapter 8 and lecture notes) This learning outcome will comprise approximately 5% of the course.	Elements of the performance: 4.1 describe the purpose and structure of a data warehouse 4.2 differentiate between an operational database and a data warehouse 4.3 differentiate between snapshot data and ongoing data with respect to the operational environment vs the data warehouse environment 4.4 understand how data is transferred from the operational environment to the data warehouse 4.5 understand the design and implementation of a data warehouse 4.6 differentiate between a data warehouse and a data mart

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	Evaluation Type	Evaluation Weight	Course Outcome Assessed
Evaluation Process and Grading System:	Assignments	40%	
	Tests	60%	

Date: August 28, 2018

Please refer to the course outline addendum on the Learning Management System for further information.