



COURSE OUTLINE: CSD210 - DATABASE MODELLING

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Approved: Corey Meunier, Chair, Technology and Skilled Trades

Course Code: Title	CSD210: DATABASE MODELLING
Program Number: Name	2091: COMPUTER - PROG/ANAL 2095: COMPUTER PROGRAMMING
Department:	COMPUTER STUDIES
Semesters/Terms:	21F
Course Description:	This course will introduce students to database design and implementation. Students will learn to analyze and model an end-user's data environment using Entity-Relationship Diagrams and normalization techniques. Database models will be physically implemented using a relational DBMS and SQL (Structured Query Language). To understand the database development process, the following concepts will be discussed: data integrity, entities, attributes, relationships, cardinalities, primary and foreign keys, normalization, conceptual modeling, logical modeling, physical modeling.
Total Credits:	4
Hours/Week:	4
Total Hours:	60
Prerequisites:	CSD102
Corequisites:	There are no co-requisites for this course.
This course is a pre-requisite for:	CSD220
Vocational Learning Outcomes (VLO's) addressed in this course:	2095 - COMPUTER PROGRAMMING
Please refer to program web page for a complete listing of program outcomes where applicable.	VLO 6 Select and apply strategies for personal and professional development to enhance work performance.
	VLO 9 Support the analysis and definition of software system specifications based on functional and non-functional requirements.
	VLO 12 Model, design, implement, and maintain basic data storage solutions.
Essential Employability Skills (EES) addressed in this course:	EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.
Course Evaluation:	Passing Grade: 50%, D

In response to public health requirements pertaining to the COVID19 pandemic, course delivery and assessment traditionally delivered in-class, may occur remotely either in whole or in part in the 2021-2022 academic year.



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	A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
Other Course Evaluation & Assessment Requirements:	<p>Evaluation Methods Weight</p> <p>Tests 60%</p> <p>Assignments/Labs 40%</p> <p>100%</p> <p>Grade</p> <p>Definition Grade Point Equivalent</p> <p>A+ 90 100% 4.00</p> <p>A 80 89%</p> <p>B 70 - 79% 3.00</p> <p>C 60 - 69% 2.00</p> <p>D 50 59% 1.00</p> <p>F (Fail) 49% and below 0.00</p> <p>CR (Credit) Credit for diploma requirements has been awarded.</p> <p>S Satisfactory achievement in field /clinical placement or non-graded subject area.</p> <p>U Unsatisfactory achievement in field/clinical placement or non-graded subject area.</p> <p>X A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.</p> <p>NR Grade not reported to Registrar's office.</p> <p>W Student has withdrawn from the course without academic penalty.</p> <ol style="list-style-type: none"> 1. In order to pass this course the student must obtain an overall test/quiz average of 50% or better, as well as, an overall assignment average of 50% or better. A student who is not present to write a particular test/quiz, and does not notify the professor beforehand of their intended absence, may be subject to a zero grade on that test/quiz. 2. There will be no supplemental or make-up quizzes/tests in this course. 3. Assignments must be submitted by the due date according to the specifications of the professor. Late assignments will normally be given a mark of zero. Late assignments will only be marked at the discretion of the professor in cases where there were extenuating circumstances, and, in such cases, a late penalty of 10% per day will be assessed. 4. Any assignment/projects submissions, deemed to be copied, will result in a zero grade being assigned to all students involved in a particular incident. 5. It is the responsibility of the student to ask the professor to clarify any assignment requirements. 6. The professor reserves the right to modify the assessment process In order to meet any changing needs of the class.
Books and Required Resources:	<p>Database Design and Implementation by Howard Gould Publisher: Bookboon.com https://bookboon.com/premium/reader/database-design-and-implementation</p> <p>Database Design by Adrienne Watt</p>

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Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
Describe the problems with spreadsheet/file processing systems and how database oriented systems provide solutions to those problems	1.1 Define/describe important terms related to database design 1.2 Compare database processing with spreadsheet/file processing 1.3 Describe data anomalies and the problems they cause 1.4 Discuss the disadvantages of spreadsheet/file processing 1.5 Discuss the advantages and disadvantages of database processing 1.6 Identify and describe the functions of a database management system 1.7 Identify the role of various components of a database system
Course Outcome 2	Learning Objectives for Course Outcome 2
Retrieve and manipulate data in a database using basic SQL queries	2.1 Query a database retrieving row and column data 2.2 Query a database using conditions to restrict the data retrieved 2.3 Rename column headings in retrieved data 2.4 Create queries involving two or more tables using joins 2.5 Insert, update, and delete data in a table
Course Outcome 3	Learning Objectives for Course Outcome 3
Describe the relational model and its key concepts	3.1 Define and describe relations, rows, and columns 3.2 Define data integrity, referential integrity, domain integrity, and entity integrity, and explain how databases help to achieve these kinds of integrity 3.3 Explain the need for primary and foreign keys 3.4 Describe one-to-one, one-to-many, many-to-many, recursive, and supertype/subtype relationships
Course Outcome 4	Learning Objectives for Course Outcome 4
Normalize databases	4.1 Explain the need for normalization as it pertains to data redundancy and integrity 4.2 Describe the properties of normal forms up to fourth normal form (4NF) 4.3 Identify functional dependencies, determinants, dependent sets, and candidate keys in a database table 4.4 Normalize relations based on analysis of functional dependencies
Course Outcome 5	Learning Objectives for Course Outcome 5
Apply the Entity-Relationship model for modeling business data requirements	5.1 Define key terms such as entity, attribute, relationship, identifier, cardinality, and domain 5.2 Distinguish entities from entity instances 5.3 Identify entities, attributes and relationships in a user's environment 5.4 Assign appropriate identifiers to entities 5.5 Identify weak and strong entities and relationships

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		5.6 Represent data models that include entities, relationships, and attributes using Entity-Relationship (ER) diagrams 5.7 Create ER diagrams using software tools 5.8 Describe and distinguish user, conceptual, and logical models 5.9 Compose user models into a more complete conceptual data model
	Course Outcome 6	Learning Objectives for Course Outcome 6
	Transform E-R data models into a physical relational design	6.1 Create tables from the entities defined in the E-R Model and the list of attributes assigned to those entities 6.2 Define primary and secondary keys for each table 6.3 Implement one-to-one, one-to-many, and many-to-many relationships, and explain how these relationships facilitate the retrieval of information 6.4 Enforce referential integrity constraints

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Labs	40%
Tests	60%

Date:

July 30, 2021

Addendum:

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

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