SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE: DATA BASE MANAGEMENT II

CODE NO.: EDP319-4 **SEMESTER:** FIVE

PROGRAM: COMPUTER PROGRAMMER ANALYST

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DEAN, SCHOOL OF BUSINESS & HOSPITALITY **DATE**

DATA BASE MANAGEMENT II — **COURSE NAME**

EDP319-4 — **COURSE CODE**

LENGTH OF COURSE: 4 periods per week for one semester

REQUIRED TEXT: "Database Processing: Fundamental, Design, Implementation" by David Kroenke

PURPOSE:

This course is a continuation of Data Base Management I where more advanced design and implementation of systems will be completed. It will extend the concepts of database management to include such topics as the use of data dictionaries, the various types of database management systems, backup and recovery, and, privacy and security.

Practical applications will be developed to encompass more advanced design and database manipulation. This will be accomplished through the use of RDB, a relational database management system and SEED, a CODASYL database management system.

STUDENT EVALUATION:

The student's final grade will consist of the following components:

Tests (2 @ 30%)	60%
Project - SEED	15%
Project - RDB	20%
Participation	5%
	100%

Assignment Deadlines:

Each assignment must be handed in on **TIME**, otherwise, they are subject to a 10% deduction per day late.

NOTE: There will be **no re-writes** in this course.

GRADING:

A+	90 - 100%
A	80 - 89%
B	70 - 79%
C	60 - 69%
R	0 - 54%

PART A - The following modules pertain specifically to the theoretical concepts in the course.

MODULE 1:

This module gives a comprehensive description of database management software including its components and the functions each perform. (Chapter 11).

Objectives: Upon completion of this module, the student will be able to:

1) identify and describe the functions of a database management system

2) describe the terms "logical transaction", "atomic transaction", "before image", "after image", "rollforward", and "rollback"

3) identify problems caused by concurrent processing and explain methods to prevent loss of updates and the "deadly embrace"

4) explain the terms "lock level", "lock granularity", "lock scope", "lock duration", and "lock agent"

5) describe the problems related to database recovery and explain methods for recovery after certain types of failures

6) describe the problem of database security and how database management software handles security

7) explain object-oriented and subject-oriented security

MODULE 2: This module gives an overview of data dictionary/directory systems. (lecture notes)

Objectives: Upon completion of this module, the student will be able to:

1) describe the major components of a data dictionary/directory system and how they are used to describe and manage "metadata".

2) describe the factors involved in selecting a data dictionary/ directory system

MODULE 3: This module discusses relational database processing with SQL. (Chapter 9)

Objectives: Upon completion of this module, the student will be able to:

1) explain how the relational model is closer to the user's perspective than other data models

2) explain the impact o the relational model on end-user database processing

3) understand the relational data access language SQL, and illustrate its use in querying single relations and multiple relations

4) demonstrate the use of SQL to update data

MODULE 4: This module gives an overview of hierarchical database systems using IBM's IMS Database System as a model. (Chapter 12)

Objectives: Upon completion of this module, the student will be able to:

1) define and illustrate a conceptual hierarchical database

2) describe and illustrate IMS logical databases and the method of defining logical database records

3) give an overview of IMS physical databases

4) describe the main features of IMS's data manipulation language, DL/I

PART B: The following modules pertain specifically to the RDB database Management System (a relational system) and to the SEED Database Management System (a network system). These will be discussed concurrently with the theoretical concepts in Part A.

MODULE 1: This module discusses the use of the RDB Relational Database Management System and the concepts surrounding it.

Objectives: Upon completion of this module, the student will be able to:

1) define the characteristics of an RDB database system

2) understand and use RDB DML statements to store, modify and delete information within an RDB database

3) run Datatrieve to make queries and generate reports

4) outline and implement the steps necessary to recover a database

MODULE 2: This module discusses the use of the SEED Database Management System and the concepts surrounding it.

Objectives: Upon completion of this module, the studnet will be able to:

1) list the steps in creating and implementing a SEED database and applications

2) illustrate the effect of retrieval commands on currency

3) understanding nad use the basic HARVEST commands and concepts to retrieve information

4) run Bloom to produce reports