SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE: DATA BASE MANAGEMENT I

CODE NO.: EDP215-5   **SEMESTER:** FOUR

PROGRAM: COMPUTER PROGRAMMER

AUTHOR: DENNIS OCHOSKI

DATE: SEPTEMBER 1995

PREVIOUS OUTLINE DATED: JANUARY 1995

New:_____   Revision:___X___

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DEAN, SCHOOL OF BUSINESS &   DATE
HOSPITALITY

DATA BASE MANAGEMENT I	EDP215
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LENGTH OF COURSE: Five periods per week for one semester

TEXTS: DATABASE PROCESSING: Fundamentals - Design - Implementation, 5th edition, by David Kroenke

USING PARADOX 5 for Windows, Special Edition, by QUE Corporation.

PURPOSE: This course focuses on the data modelling skills required to effectively design and implement database-oriented systems.

The course begins with a study of the necessary terminology and concepts to gain an appreciation of databases/database management systems. Data modelling and design skills are developed by defining logical relationships among entities using the Entity-Relationship Model, and defining objects using the Semantic Object Model.

Practical skills are developed through the study and use of Paradox, a relational database management system. Case studies will be used to illustrate the analysis, design, and implementation of a database system.

COURSE OBJECTIVES:

1. Learn the role of databases and database applications in organizations.

2. Learn and practice data modelling using the Entity-Relationship Model and the Semantic Object Model.

3. Understand the impact that user requirements have on database designs and application program structure.

4. Learn the fundamentals of a relational database management system.

5. Design and implement a relational database.

6. Understand the functions and responsibilities of Data/Database Administration.

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PART 'A':   The following modules pertain specifically to the theoretical concepts discussed in the course.

Module 1:   **Introduction to Database Concepts**
                  (chapters 1 and 2 - Kroenke)

Objectives: When this module is completed, the student should be able to:

                  1.   compare database processing with file processing.

                  2.   understand the advantages and disadvantages of database processing.

                  3.   identify and describe the functions of a database management system.

                  4.   identify the role of various components of a database system.

                  5.   define schema, sub-schema, and internal view.

Module 2:   **Data Modelling and Database Development**
                  (chapters 3 and 4 - Kroenke)

Objectives: When this module is completed, the student should be able to:

                  1.   relate this course to systems analysis and design.

                  2.   understand the perspective for data modelling and design tools and techniques.

                  3.   understand and apply the elements of the Entity-Relationship Model for modelling business situations.

                  4.   understand and apply the elements of the Semantic Object Model for modelling business situations.

                  5.   compare and contrast the E-R Model and the Semantic Object Model.

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Module 3:   **The Relational Model and Normalization**
            (chapters 5, 6 and 7 - Kroenke)

Objectives: When this module is completed, the student should be
            able to:

1.   explain relational terminology.

2.   understand and apply the rules for composing
     relations.

3.   understand how trees, simple networks and complex
     networks are represented in the Relational Model.

4.   understand the concept of normalization and apply
     normal forms to database design.

5.   transform E-R models into relational designs.

6.   transform Semantic Object models into relational
     designs.

Module 4:   **Resource Sharing and Client-Server Architecture**
            (chapter 16 - Kroenke)

Objectives: When this module is completed, the student should be
            able to:

1.   describe characteristics of multi-user and
     distributed processing architectures.

2.   understand the use of resource sharing systems for
     the processing of downloaded data.

3.   understand the use of client-server systems for
     multi-user transaction processing.

4.   describe the fundamental concepts of distributed
     database processing.

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Module 5:   Data/Database Administration
                    (chapter 15 - Kroenke)

Objectives: When this module is completed, the student should be
                    able to:

            1.   understand the importance of data/database
                    administration in organizations.

            2.   define the DA's/DBA's role in the management of
                    data activity.

            3.   define DA/DBA personnel and placement within an
                    organization.

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PART 'B':   The following modules pertain specifically to Paradox,
                     a relational database management system. These topics
                     will be discussed concurrently with the theoretical
                     concepts in PART 'A'. (chapter 8 - Kroenke, Paradox)

Module 1:   **Creating and Manipulating Database Tables**

Objectives: When this module is completed, the student should be
                     able to:

        1.   create, edit, save, and print a table.

        2.   change the structure of a table.

        3.   incorporate validity checks on data entered into a
              table.

        4.   search a table for records.

        5.   use the Speedbar.

        6.   work with objects and properties.

Module 2:   **Searching for Information in a Database**

Objectives: When this module is completed, the student should be
                     able to:

        1.   create a query.

        2.   select fields to be included in a query.

        3.   select records to be included in a query.

        4.   use wildcards in a query.

        5.   use operators in a query.

        6.   search for a range of values.

        7.   sort records in a table.

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Module 3:   **Using the Form Window to View, Edit, and Add Records**

Objectives: When this module is completed, the student should be
                     able to:

                     1.   view, edit, and add records using the form window.

                     2.   create a custom data input form.

                     3.   change field and object properties.

                     4.   use the design tools to draw objects.

                     5.   create calculated fields.

                     6.   use two or more tables in a form.

Module 4:   **Creating Reports**

Objectives: When this module is completed, the student should be
                     able to:

                     1.   develop and print a quick report.

                     2.   develop a custom report.

                     3.   enhance the design of a report.

                     4.   develop a report with groups of records.

                     5.   develop a report with multiple tables.

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STUDENT EVALUATION:

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

Tests	(3 @ 20%)	60%
Assignments in database design	(2 @ 5%)	10%
Project (design & implement a Paradox database)		30%
		100%

Grading:

A+	90 - 100%
A	80 - 89%
B	70 - 79%
C	60 - 69%
R	REPEAT - under 60%

SPECIAL NOTES:

1. Students with special needs due to such things as physical limitations, visual impairments, hearing impairments or learning disabilities are encouraged to discuss required accommodations, confidentially, with the instructor.

2. There will be no re-writes in this course except in situations out of the control of the student (such as illness, urgent family matters, etc.) in which a re-write may be issued at the discretion of the instructor.

3. Assignments received after the due date are subject to a grade of zero except in situations as specified in #2 above.