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: PROGRAMMER/ANALYST

AUTHOR: DENNIS OCHOSKI

DATE: SEPTEMBER 1995

PREVIOUS OUTLINE DATED: SEPTEMBER 1994

New:_____ Revision: x

APPROVED: _____ 95-08-21
DEAN, SCHOOL OF BUSINESS & HOSPITALITY **DATE**

DATA BASE MANAGEMENT II — **COURSE NAME**

EDP319 — **COURSE CODE**

LENGTH OF COURSE: Four periods per week for one semester

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

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

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 backup and recovery, privacy and security, information repositories, and data warehouses.

Practical applications will be developed to encompass more advanced design and implementation. This will be accomplished through the continued use of Paradox, a relational database management system.

COURSE OBJECTIVES:

1. Understand the importance of recovery procedures given various system problem occurrences.
2. Understand the importance of security procedures in protecting an organization's data resources.
3. Understand how an information repository/data dictionary system is used to capture and track an organization's data requirements.
4. Understand how a data warehouse is used to provide decision-support personnel with historical data needed for trend analysis.
5. Understand how the Relational Model differs/compares with the Network and Hierarchical Models.

DATA BASE MANAGEMENT II	EDP319
COURSE NAME	COURSE CODE

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

Module 1: **Problems/Solutions Inherent in a Multi-User Database Environment.**
(chapter 15 - Kroenke)

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

1. identify problems caused by concurrent processing.
2. explain methods to prevent loss of updates and the "deadly embrace".
3. describe the problems related to database recovery.
4. explain methods for recovery after certain types of system failures.
5. define the terms; logical transaction, before image, after image, rollback, and rollforward.
6. describe the problems associated with database security and how database management software handles security implementation.
7. explain object-oriented and subject-oriented security.

Module 2: **Information Repositories/Data Dictionary Systems**
(lecture notes)

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

1. describe the major components of an information repository/data dictionary system and how they are used to describe and manage "metadata".
2. describe the factors involved in selecting a repository/data dictionary.

3. explain the role of CASE tools in a metadata environment.

4. use a CASE tool to create data models and to document entity and attribute definitions.

Module 3: **Data Warehouse for Decision Support**
(lecture notes)

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

1. describe the purpose and structure of a data warehouse.

2. differentiate between "snapshot" data and "ongoing" data with respect to the operational environment vs the data warehouse environment.

3. understand how data is transferred from the operational environment to the data warehouse.

4. design and implement a data warehouse.

Module 4: **The Network and Hierarchical Data Models**
(chapters 13, 14, Appendix)

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

1. explain the characteristics of databases based on the CODASYL DBTG network data model.

2. illustrate how DBTG sets are used to represent objects and relationships between objects.

3. discuss how schemas and subschemas are defined.

4. explain the characteristics of databases based on the Hierarchical data model.

5. illustrate how trees, simple networks and complex networks are represented in DL/I.

DATA BASE MANAGEMENT II	EDP319
COURSE NAME	COURSE CODE

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'.

Module 1: **Using Advanced Form Techniques**

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

1. create nested multi-table forms.
2. define and modify a secondary index.
3. set filters and place graphs in forms.
4. use validity checks and Pictures.
5. define password protection.

Module 2: **Using Advanced Query by Example**

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

1. specify multiple conditions in multi-table queries.
2. create inner and outer joins.
3. use summary operators.
4. change tables with queries.

DATA BASE MANAGEMENT II — COURSE NAME

EDP319 — COURSE CODE

Module 3: **Working With Files**

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

1. transfer files from one table to another.
2. restructure and sort tables.
3. import and export data.
4. delete objects and empty a table.
5. define aliases.
6. use multi-user network features.

Module 4: **Programming in Paradox**

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

1. understand ObjectPAL basics for creating programs.
2. use ObjectPAL to interact with a user.
3. understand and create menus.

DATA BASE MANAGEMENT II	EDP319
COURSE NAME	COURSE CODE

STUDENT EVALUATION:

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

Tests	(3 @ 20%)	60%
Project - Paradox		
Phase 1		25%
Phase 2		15%
		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.