SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

# COURSE OUTLINE

Course Outline: DATA BASE MANAGEMENT I

Code No.: EDP 215

Program: PROGRAMMER

Semester:

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New: _____ Revision: X

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Chairperson Date

**DATA BASE MANAGEMENT I** — Course Name

**EDP 215** — Course Number

**LENGTH OF COURSE:** Five periods per week for one semester

**TEXTS:**

Database Processing - David Kroenke

SEED A.D.S. (Application Development System) Pocket Guide

SEED D.S.O. (Decision Support Option) Pocket Guide

**OTHER REFERENCES:**

| | |
|---|---|
| SEED KERNEL | User Guide |
| SEED BLOOM | User Guide |
| SEED HARVEST | User Guide |

**PURPOSE:** This is an introductory course in database management systems.

The course begins with a study of the necessary terminology and concepts to gain an appreciation of what a database/database management system is. Database design skills are developed by defining and writing schemas, sub-schemas, and set relationships.

Practical skills are developed through the study and use of SEED, a CODASYL data base, including its data manipulation language, online inquiry, and report generator.

**PART A:**

The following modules pertain specifically to the theoretical concepts discussed in the course.

**Module 1;** Introduction to database (Chapter 1)

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

1. distinguish database processing from file processing.
2. understand the advantages and disadvantages of database processing.
3. identify the role that various components of a database system play.
4. define the terms logical and physical record/file, primary and secondary key, unique and nonunique key, schema, sub-schema, and internal view.

**Module 2:** Database structures (Chapter 4)

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

1. understand the concept of sequential, linked, and inverted lists.
2. distinquish among trees, simple networks and complex networks.
3. understand the difference between flat files and nonflat files.
4. show the relevence of data structures to database processing
5. illustrate the usefulness of linked lists.
6. understand how trees, simple networks, and complex networks can be represented using linked lists and inverted lists.
7. understand how secondary unique and non-unique keys can be represented using linked lists and inverted lists.

**Module 3:** Database Design
(Chapter 5)

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

1. understand the complexities of database design.
2. understand the inputs, outputs, and processes for both logical and physical database design.
3. understand the process for database design and implementation.

**Module 4:** Database models
(CHapters 9, 10, 7, and appendix A)

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

1. understand the nature of database processing using the CODASYL model.
2. represent trees, simple networks, and complex networks with the CODASYL model.
3. explain relational model terminology.
4. show how trees, simple networks, and complex networks are represented in the relational model.
5. recognize and show results of compatible and noncompatible unions, differences, and intersections.
6. explain IMS (hierarchical) model terminology.
7. show how trees, simple networks, and complex networks are represented on the hierarchical model.

**Module 5:** Database Administration
(Chapter 14)

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

1. understand the importance of database administration.
2. define the DBA's role in the management of data activity.
3. define DBA personnel and placement within an organization.

**PART B:**

The following topics pertain to the SEED Data Base Management Systems and will be discussed concurrently with the theoretical concepts in Part "A".

Objectives: When Part "B" is completed the student should be able to:

1) establish relationships between a given set of data attributes.
2) document the logical view of the data structure required by application.
3) synthesize the logical views of the data structure into an overall logical SCHEMA.
4) code the logical views (SUB SCHEMAS) of the data structure and the SCHEMA.
5) implement a data base on the VAX.
6) use a Query language (HARVEST) against the data base.
7) use a Report Generator Language (BLOOM).
8) establish and implement data access and controls on the data base.

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

| | | |
|---|---|---|
| TESTS (3 @ 24%) | = | 72% |
| Assignment #1 | = | 5% |
| Assignment #2 | = | 20% |
| Participation | = | 3% |
| | | 100% |

**Grading:**

| | | |
|---|---|---|
| A+ | = | 90 - 100% |
| A | = | 80 - 89% |
| B | = | 70 - 79% |
| C | = | 60 - 69% |
| R | = | 0 - 59% |

**Assignment Deadlines:**

Assignments must be handed in **ON TIME**, otherwise they are subject to a 10% deduction per day late. All assignments must be submitted, otherwise the student has not fully completed the course and is subject to receiving an "R" grade.

**NOTE:** **There will be no rewrites/supplemental test in this course.**