

EDP215-5
DATABASE MANAGEMENT COURSE

Sault College of Applied Arts and Technology sault ste. marie

Course Outline

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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 data base management system is. Data base design skills are developed by the defining of attributes, entities, and set relationships, the drawing of Bachman diagrams and the writing of schemas and sub-schemas.

Practical skills are developed through the study and use of SEED, a Codasyl Data Base, including its data manipulation language, online enquiry, and report generator. The principles are taught through the design and implementation of a small financial system.

The course ends with a discussion of the role of the data base administrator and privacy and security of data.

This course extends the concepts of structured analysis and design to include the data base environment. At the conclusion of the course, the student, having analysed a business application will be able to accomplish the following:

- a) the definition of the entities and data attributes involved,
- b) establish relationships between a given set of data attributes through 3NF analysis,
- c) document the logical views of the data structures required by the application,
- d) synthesize the logical views of the data structures into an overall logical SCHEMA,
- e) code the logical views of the data structures (SUBSCHEMA) and the SCHEMA, for a data base system,
- f) implement a data base on a computer,
- g) development and implement COBOL programs that use a data base,
- h) use a Query language against the data base,
- i) use a Report Generator language,
- j) establish and implement data access and controls on the data base.

EVALUATION:

The marking for this course is as follows:

- 20 percent first assignment -- this assignment consisted of given a list of data elements define the entities and set relationships, then draw the Bachman Diagram for this situation, and then write the data definition language (SCHEMA) that is required.
- 20 percent mid-term test -- this test is used to determine the students understanding of the principles and concepts of data base management systems.
- 20 percent final test -- this test not only test for the principles and concepts it is heavily weighed to the practical concepts of the course.
- 40 percent on the major assignment for the course. The development and implementation of the small financial system. This includes a post implementation audit of this system by the instructor.

The text book used by this course is James Martin's Principles of Data Base Management. The topics covered include the following:

WHY DATA BASES?

- corporate data bases
- data basics
- categories of data usage
- flexibility and independence
- the changing view of data
- operating systems versus information systems

DATA ORGANIZATION

- Schemas and Subschemas
- tree and plex structures
- relational data bases
- normalization to 3rd normal form
- file addressing
- searching
- distributed data bases

DATA BASE SOFTWARE

- types of data base languages
- data base management systems
- the codasyl data description language
- query languages
- data dictionaries

MANAGEMENT CONSIDERATIONS

- the infrastructures
- the data administrator and data base administrators
- security and privacy