**GOVERNORS STATE UNIVERSITY**
**College of Business and Public Administration**

Course Title: MIS 420 B Business Information Retrieval and Database Management

Session: January - April 1995. Winter Trimester, Block 1
Monday: 7:30-10:40 p.m.

Instructor: Dr. Akkanad M. Isaac

Phone: (708) 534-4951

Units: Three Credits

Target Group: Undergraduate Students
Required course in the MIS Concentration

Prerequisites: MIS 401 or CPSC 370

**Description:**

Introduction to the management of database systems. Management problem solving will be related to the output of databases to include the development of business strategies, competitive analysis, internal analysis of cost, and other selected business subjects. Commercial software will be reviewed for performance and advantage. This course will cut across functional management lines and show a relationship between the external and internal environment and the business firm.
The course is designed as an introduction to the design, operation and performance evaluation of databases. The role of databases as an integral part of management information systems, decision support systems, and expert systems is emphasized. Major part of the course is devoted to Relational Data Models; a basic introduction of the hierarchical and network models is included as part of the course. Topics covered include : Database Architecture, Conceptual and Physical Design of Databases, Database Environment, Database Administration, Database Security, Object-oriented Data Languages, Knowledge-Based systems, etc.



**Performance Objectives:**

1. Develop an understanding of the nature of databases and their role in MIS, DSS and Expert Systems.
2. Provide an understanding of the basic conceptual models of databases.
3. Study the Hierarchical, Network and Relational data models, and the factors to be considered in their implementation.
4. Develop an appreciation of the basic concepts of database administration, including Security, Concurrency Control and Data Recovery.
5. Gain hands-on experience in the design of databases.

Textbooks:

1. Pratt, Philip J. & Adamski, Joseph J.
   Database Systems and Management Design. 3rd ed. Boyd & Fraser Publishing Company, 1994.
2. Prague, Cary N.
   dBASE 5.0 for Windows Handbook (Borland Press Series). Random House, 1994.

Note: Students are also required to use dBASE for Windows (version 5) and Paradox for Windows (version 5) manuals (especially, "User's Guide") accompanying Borland Software.

Evaluation:

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| Examination 1 | 15% |
| Examination 2 | 15% |
| Final Examination | 20% |
| Database Project/Assignments | 30% |
| Class Participation/ Attendance | 10% |

Course Policies:

1. The student is required to attend classes regularly and participate in class discussion and computer-based exercises.
2. The student shall complete all assignments by specified due dates. Late submissions, even if accepted, will affect grades.
3. Grade of "incomplete" will not be given except under extenuating circumstances.
4. Make-up exams will be given only when supported by verifiable medical exigencies.

Database Project:

Each student is required to study and develop a computerized business application using a 4 GL (dBase, Power Builder or Paradox) in the PC environment. Power Builder (product of Power Soft Corporation) is a professional, fully object-oriented client/server development environment. It provides an integrated tool set to spread application development tasks across an organization while maintaining control over application quality, look and feel, and performance. dBASE and Paradox are popular DBMS (products of Borland Intenational). Detailed requirements of the database project and assignments will be specified in class after students have developed proficiency in using a selected DBMS package.

The major steps involved in developing the project are the following:

Step 1: Develop a description of a company/business environment) - hypothetical or real - for which a database-oriented business application shall be developed. Obtain instructor's approval before proceeding to Step 2.
Step 2: Develop a comprehensive "requirement specification" for the Project. This step should demonstrate your ability to use the concepts learned in MIS 401 (Applicaton Prototyping). Detailed documentation including data flow diagrams, ER Models, etc. is needed.
Step 3: Design and develop a PC based software to meet the database requirement specification. Test and validate the software product.

## COURSE OUTLINE

| Session Number | Date | Topic | Reading |
|---|---|---|---|
| 1 | Jan 23 | Introduction to Database Technology | Ch. 1 |
| | | Organizational Environment | |
| | | Computer Lab/Assignment | |
| 2 | Jan 30 | Functions of a DBMS | Ch. 2 |
| | | Computer Lab/Assignment | |
| 3 | Feb 6 | Relational Data Model | Ch. 3 |
| | | Relational Algebra & Calculus | Ch. 4 |
| 4 | Feb 13 | University Closed. HOLIDAY | |
| 5 | Feb 20 | Microcomputer Database Management | Ch. 5 |
| | | Normalization | Ch. 6 |
| 6 | Feb 27 | EXAMINATION 1 | |
| | | Computer Lab/Assignment | |
| 7 | Mar 6 | Database Design | Ch. 7 |
| | | Computer Lab/Assignment | |
| 8 | Mar 13 | Database Design: Advanced Topics | Ch. 8 |
| | | Database Selection & Implementation | |
| 9 | Mar 20 | Computer Lab/Assignment | |
| | | Hierarchical & Network Data Models | Ch. 9 |
| 10 | Mar 27 | EXAMINATION 2 | |
| | | Physical Database Design | Ch.10 |
| 11 | Apr 3 | Computer Lab/Assignment | |
| | | The Fourth Generation Environment | Ch.11 |
| 12 | Apr 10 | Database Administration & Control | Ch.12 |
| | | SQL Language | |
| 13 | Apr 17 | Database Project Presentation | |
| | | Distributed Database Systems | Ch.13 |
| 14 | Apr 24 | FINAL EXAMINATION | |
| | | Database Project Presentation | |