

MASTER SYLLABUS

COURSE NO., HOURS, AND TITLE: IST 334—3 Database Processing

COURSE DESCRIPTION:

This course is designed to provide students with an understanding of advanced database processing concepts and various database management systems. Topics will include data modeling, database design, database implementation using a relational database management system, database administration, and distributed processing. A grade of C or better is required. Prerequisite: 142, 232 or equivalent.

PREREQUISITE TO: None

COURSE OBJECTIVES:

Upon successful completion of this course, the student should be able to:

1. Understand advanced database processing concepts.
2. Use the entity-relationship and semantic object data models.
3. Design and implement a database using a relational database management system.
4. Understand the management and technical skills needed in database administration.
5. Describe the use of distributed processing in relation to client-server systems.

TOPICAL OUTLINE:

Topics	Percentages of Time
I. Fundamental Database Concepts	15%
A. Database processing	
B. Database management systems	
C. Developing databases	
II. Data Modeling	15%
A. The entity-relationship model	
B. Semantic object model	

- III. Database Design 25%
 - A. Relational databases and normalization
 - B. Database design using entity-relationship models
 - C. Database design using semantic object models

- IV. Relational Database Implementation 30%
 - A. Foundations of relational implementations
 - B. Structured Query Language (SQL)
 - C. Relational implementations for microcomputers

- V. Administration 10%
 - A. Data as an organizational asset
 - B. Database administration
 - C. Database security
 - D. Database reliability

- VI. Distributed Processing 5%
 - A. Client server and related applications
 - B. Distributed database processing
 - C. Distributed concurrency control

TEXTBOOKS:**Required:**

Rob, P. & Coronel, C. (2000). *Database systems: Design, implementation, & management* (4th ed.). Cambridge, MA: Course Technology.