SYLLABUS
PART I
EDISON STATE COMMUNITY COLLEGE
CIS 233S DATABASE MANAGEMENT CONCEPTS
3 CREDIT HOURS

COURSE DESCRIPTION

Comprehensive introduction to database management systems, including database design, database languages, and database system implementation. Topics covered include detailed coverage of relational databases, the SQL query language, normalization, and database administration. Advanced topics include concurrency issues, performance tuning, distributed databases, data warehouses, big data, and NoSQL. Students will gain valuable experience in designing, building, and manipulating databases. Prerequisite: CIS 110S. Lab fee.

COURSE GOALS

The student will:

Bloom's Level		Program Outcomes
2	1. Understand the role of databases and database management systems in managing organizational data and information.	7
2	2. Understand the historical development of database management systems and logical data models.	7
3	3. Use a conceptual data modeling technique (such as entity-relationship modeling) to capture the information requirements for an enterprise.	7
5	4. Design and normalize relational databases to at least the third normal form (3NF).	7
3	5. Use the data definition, data manipulation, and data control language components of SQL in the context of one widely used implementation of the language.	7
3	6. Perform simple database administration tasks.	7
3	7. Understand the concept of a database transaction and apply it appropriately to an application context.	7
2	8. Understand the role of databases and database management systems in the context of enterprise systems.	7
2	9. Understand the key principles of data security and identify data security risk and violations in data management system design.	7, 8
3	10. Use a team approach to develop a database case study.	2, 4
2	11. Discuss the importance of ethics in the computer industry.	1

CORE VALUES

The Core Values are a set of principles that guide Edison State Community College in creating its educational programs and environment. They will be reflected in every aspect of the College. Students' educational experiences will incorporate the Core Values at all levels, so that a student who completes a degree program at Edison State Community College will not only have been introduced to each value, but will have had them reinforced and refined at every opportunity.

TOPIC OUTLINE

1. Introductory Database Concepts and Social, Ethical, and Legal Issues
2. Database Planning and Database Architecture
3. The Entity-Relationship Model
4. The Relational Model

5. Relational Database Management Systems and SQL
6. Normalization and Denormalization
7. Advanced SQL
8. Introduction to Database Security
9. Object-Based Models
10. Relational Query Optimization
11. Transaction Management
12. Distributed Databases
13. Semi-Structured Data
14. Big Data and NoSQL
15. Data Warehouses