

SPECIAL TOPICS
ECE 486 – Design of Database Systems
Fall Semester

2005-2006 Catalog Data: ECE 486. Special Topics. Elective courses of special or current interest. Usually taught by visiting faculty with special or unique qualifications. Normally taken by Seniors. Prerequisites are announced with course offerings. *One semester; three credits.*

ECE 486: Design of Database Systems. Credits 3. Comprehensive introduction to the design of databases and the use of database management systems for the implementation of database applications. Entity-relationship and relational data models, and database design. Abstract query languages (relational algebra), and SQL (language for creating, querying, and modifying relational and object-relational databases. Views, integrity, constraints, triggers, transactions, and security. Data warehouses, data mining, temporal databases, XML.

Textbook: Hector Garcia-Molina et al., Database Systems: The Complete Book, Prentice Hall, New Jersey, 2002.

References: Nilesh D. Shah , Database Systems Using Oracle: A Simplified Guide to SQL and PL/SQL, Prentice Hall, New Jersey, 2002.
Michael R. Blaha, Manager's Guide to Database Technology, A: Building and Purchasing Better Applications, Prentice Hall, New Jersey, 2003.
David Kroenke, Database Processing: Fundamentals, Design, and Implementation, 9/E, Prentice Hall, New Jersey, 2003.
David M. Kroenke, Database Concepts, Prentice Hall, New Jersey, 2003.

Instructor: Dr. Juan Carlos Olabe-Basogain, Professor

Goals: The objective of this course is to teach the fundamentals of database use, and the implementation of database applications.

Topics

- 1 Introduction to Database Systems.
- 2 Entity-Relationship Model.
- 3 Relational Design.
- 4 Relational Algebra
- 5 SQL
- 6 Programming with SQL
- 7 Views, Authorization.
- 8 Transactions, Constraints, Triggers.
- 9 Recursion, Object Oriented Design.
- 10 Object-Relational SQL.
- 11 Data Warehousing, Data Mining, XML.
- 12 Tests.

Class Schedule: Three 50-minute sessions per week

Prepared by: Dr. Juan Carlos Olabe Date: August, 2005