ICS 421 : Database Systems (3 cr.)

Description	Principles of enterprise database processing in a multi-user environment. Students will address issues associated with a enterprise database processing with respect to user authentication and development in an application/internet environment. Approaches to concurrent processing using cursor definition and ANSI isolation levels are presented with established acceptable risk levels.
Prerequisites	321, or consent
Learning Objectives	• understand methods and implementation o f user authentication, privileges and roles for major DBMSs. • be able to process a database via SQL and application programs • be able to use current technology and products for publishing databases using Internet technology with ODBC, OLE DB, ADO, and ASP or related functions • understand and use algorithms in dealing with concurrent processes in a multi-user environment with major DBMSs • implement cursor types and isolation lev els for accepted risk levels. • be able to use database XML and other features for materializing complex row-set views. • understand data mining, data warehouse, and OLAP cube concepts in suppor t of functional and strategic management levels.

Topic List

#	Topic	Lecture Hours
1	Introduction to Multi-user Databases	3.0
2	Networks, Multi-tier Ar chitectures	3.0
3	ODBC (JDBC), OLE DB, AD O, and ASP (JSP) framework structure	4.0
4	Authentication, roles and privileges	3.0
5	Concurrent-processing issues	3.0
6	Isolation levels and Cursor definitions	2.0
7	Concepts of XML Schema and understand their importance to database processing	4.0
8	nature and problems of distributed database processing	3.0
9	concepts of database backup and recovery	3.0
10	Data mining principles	3.0
11	Data Warehouse principles	3.0
12	OLAP Cube and understand its relationship to database processing principles	3.0