

CPIT-340 Syllabus

Catalog Description

CPIT-340 Database (II)

Credit: 3 (Theory: 3, Lab: 0, Practical: 1)

Prerequisite: CPIT-240

Classification: Elective

The objective of this course is to study advanced topics in the domain of databases. Topics include distributed databases and client-server architectures, concepts for object databases, enhanced data models for advanced applications, database tuning in relational database systems, concurrency control techniques, and database security.

Class Schedule

Lab/Tutorial 90 minutes 1 times/week

Meet 50 minutes 3 times/week or 80 minutes 2 times/week

Textbook

Ramez Elmasri, Shamkant B. Navathe, , "Fundamentals of Database Systems", Addison-Wesley; 7 edition (2015-06-19)

ISBN-13 9780133970777 **ISBN-10** 0133970779

Grade Distribution

Week	Assessment	Grade %
3	Graded Lab Work 1	1
5	Quiz 1	2.5
5	Graded Lab Work 2	2
7	Graded Lab Work 3	1
8	Exam 1	15
8	Quiz 2	2.5
8	Graded Lab Work 4	2
10	Graded Lab Work 5	1
11	Graded Lab Work 6	2
12	Project (Individual)	15
12	Graded Lab Work 7	1
12	Exam 2	15
16	Comprehensive Final Exam	40

Topics Coverage Durations

Topics	Weeks
Distributed Databases and Client-Server Architectures	3
Concepts for Object Databases	2
Database Tuning in Relational Database Systems	1
Concurrency Control Techniques	2
Database Security	4

Last Articulated

December 18, 2017

Relationship to Student Outcomes

a	b	c	d	e	f	g	h	i	j	k	l	m	n
				x		x		x	x				

Course Learning Outcomes (CLO)

By completion of the course the students should be able to

1. Develop distributed database concepts using data fragmentation and replication (i)
2. Apply concurrency control and recovery in distributed databases (e)
3. Create active databases using triggers (i)
4. Analyze enhanced data models for advanced application using temporal, spatial and multimedia databases (j)
5. Define deductive databases (j)
6. Design database security using discretionary or mandatory access controls (e)
7. Describe encryption and public key infrastructure (i)
8. Apply tuning with practical databases (i)
9. **Apply object oriented database concept (j)**
10. **Evaluate class hierarchies and complex objects (j)**
11. **Evaluate transactional processing in single or multi user system and concurrent execution (g)**
12. **Describe two phase locking techniques for concurrency control (i)**
13. List multi version concurrency control techniques (j)
14. **Analyze granularity of data (j)**

Coordinator(s)

Dr. Mutasem Jarrah, Associate Professor