

**BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI-HYDERABAD CAMPUS**  
**INSTRUCTION DIVISION, SECOND SEMESTER 2012 - 2013**  
**COURSE HANDOUT (PART II)**

**Date: 08/01/2013**

In addition to Part -I (General Handout for all courses appended to the Time-Table) this portion gives further details pertaining to the course.

**Course No.** : CS F212  
**Course Title** : Database Systems  
**Instructor-in-charge:** R Gururaj  
([gururaj@bits-hyderabad.ac.in](mailto:gururaj@bits-hyderabad.ac.in))  
**Co- Instructor** : Mr.CR Prasanna; Ms.Rakhee; Mr. Digambar Powar

### **Course Description**

Introduction to Database Management Systems; Data Modeling; Relational data model; Query Languages; File and Storage organization; Indexing; Integrity rules; Database Design techniques; Transaction Management; Concurrency Control; Database Recovery.

### **Scope and Objective**

The course aims at familiarizing the students with the concepts of DBMS and its applications. It deals with fundamentals of data modeling and database design. It also introduces query languages for Relational model. Other important issues like Data storage, Indexing, Transaction management, Concurrency Control, and Database Recovery are also dealt with.

### **Prescribed Text Book**

#### **Text Book**

**T1.** Silberschatz, Abraham & H.F. Korth Database Systems Concepts MGHISE, 6th ed., 2010.

#### **Reference Books**

**R1.** Elmarsi R, & Navathe S B, *Fundamental of Database System*, 5e, Pearson Education, 2007.

**R2.** Ramakrishna R. & Gehrke J, *Database Management Systems*, 3e, Mc-Graw Hill, 2003.

### **4.Course Plan:**

<b>Lecture#</b>	<b>Topic</b>	<b>Reading</b>
1-3	Database System Concepts and Architecture	T1-Ch.1; R1-Ch.1&2 and Class Notes
5-8	Data Modeling Using the Entity-Relationship (ER) Model	T1-Ch.2 ; R1-Ch.3

9-10	The Enhanced Entity-Relationship (EER) Model	T1-Ch.7; R1-Ch.4
11-12	The Relational Data Model and Relational Database Constraints	T1-Ch.8; R1-Ch. 5
13-14	Relational Database Design by ER-and EER-to-Relational Mapping	T1-Ch.8; R1-Ch.7
15	Current Research on Data Modeling (1-2 papers taken from renowned Journals/Conference proceeding )	
16-19	The Relational Algebra and Relational Calculus	T1-Ch.6 and R1-Ch.6
20-22	SQL: Schema Definition, Constraints, Queries, and Views, and Advanced SQL	T1-Ch.3-5; R1-Ch. 8&9
23-27	Functional Dependencies and Normalization	T1-Ch.8 and R1-Ch. 10 &11
28-30	Disk Storage, Basic File Structures, and Hashing	T1-Ch.10-11 and R1-Ch.13
31	Current Research on Query Processing & Optimization (1-2 papers taken from renowned Journals/Conference proceeding )	
32-34	Indexing Structures for Files	T1-Ch.11; R1-Chapter 14
35-36	Introduction to Transaction Processing Concepts and Theory	T1-Ch.14; R1-Ch.17
37-38	Concurrency Control Techniques	T1-15 and R1-Ch.18
39-40	Database Recovery Techniques	T1-Ch.16; R1-Ch.19

### 5. Evaluation Scheme:

S No	Evaluation Component	Weightage	Date	Nature of Component
1	Test-1	20%	26/2, 8.00 - 9.00 AM	Close Book
2	Test-2	20 %	29/3, 8.00 - 9.00 AM	Close Book
3	Lab assignment	20 %		Open Book
5	Comprehensive Exam	40 %	07/05 AN	Close Book

### 6.Make-up-Policy

Make-up will be strictly granted on prior permissions and on justifiable grounds only. Students applying for make-up on medical grounds need to submit confirmation letter from the concerned warden.

7.**Course Notices:** All notices pertaining to this course will be displayed on the CSIS Notice Board and Course webpage.

8. **Chamber Consultation** :To be announced in the Classroom.

**Instructor-In-Charge**  
**CS F212**