

(This syllabus is based on the shared Dropbox Link named "All Contents". Download all the latest contents from that link (for Papon Sir's Part).)

## **Section A**

### Introduction

Slide- #1-Intro.pptx

### LSM Tree and Monkey

Slides- #2-LSM Tree.pptx

Papers- lsmtree.pdf (optional), Monkey.pdf

### Distributed Computing

Slide- #4-Distributed Computing-Fundamentals.pptx

Book- Distributed Systems Concepts and Design (Related Topics)

Paper- The CAP Theorem.pdf

### Modern Database

Slides- (Modern Database) Bigtable.pdf, (Modern Database) Dynamo.pptx, (Modern Database) Spanner-1.pdf

Papers- Bigtable.pdf, Dynamo.pdf, Spanner.pdf

## **Section B**

### Introduction

Slide #3-Distributed DBMS (Intro).pptx

### LSM Tree and Monkey

Slide #2-LSM Tree.pptx

Papers- lsmtree.pdf, Monkey.pdf

### Overview of Query processing, Query decomposition and Data localization

Slide #6-Query Processing.pptx (Chapter 6 & 7)

### Optimization of Distributed Queries

Slide #7-Query Optimization.pptx (Chapter 8)

### Introduction to Transaction management

Slide #8-Transactions.pptx (Chapter 10)

### Distributed Concurrency Control

Slide #9-Concurrency Control.pptx (Chapter 11)

### Distributed DBMS Reliability

Slide #10-Reliability.pptx (Chapter 12)

## **Instructions**

- LSM tree and Monkey is included in both section A and section B. So, questions related to these topics will appear in both sections

- Two helper slides on LSM Tree & Monkey is provided for better understanding. **Please keep in mind that, the survey paper is NOT included in the term final. Also, if you know how LSM trees work, you can skip the “lsmtree.pdf” paper as well.**

- Cassandra & Fragmentation of Distributed Database is not included in Syllabus

- In section A, roughly two sets will be from Modern Databases. The remaining two sets will be from LSM tree, Monkey and Distributed Computing. Please beware that questions will be mixed across sets. So, do NOT skip any topics.

- For Sakshar sir's part: cover all the topics taught in the class. **The reference book is “Principles of distributed database systems by Ozsü & Valduriez”.**