

IT354

Database Design & Management

Who am I?

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Syllabus

- Introduction to Databases
- The Entity-Relationship and Enhanced Entity-Relationship Models
- The Relational Model and Relational Algebra
- Functional Dependencies and Normalization
- Transactions, Concurrency, Recovery and Database Performance and Tuning
- Distributed Databases & Client/Server Architecture

Aims and Outcomes

- After studying this unit, you should be able to:
 - ◆ Describe the components, functions and people involved with a DBMS
 - ◆ Understand the role of high level conceptual data models
 - ◆ Understand why the relational model is so important
 - ◆ Be able to describe and use the essential features of the relational model
 - ◆ Understand the concepts of functional dependency and multi-valued dependency and their application to database design theory
 - ◆ Understand the goals and use the methods of database tuning
 - ◆ Understand the concept of a transaction
 - ◆ Appreciate the need for concurrency control
 - ◆ Characterize transaction schedules as serial, non-serial and conflict-serializable
 - ◆ Understand locking techniques as applied to concurrency control
 - ◆ Understand the basic recovery concepts
 - ◆ Understand the advantages, disadvantages and design issues of distributed databases

Assessment

- **Assessment**

Coursework:	40%
Open Book Examination:	60%

Total:	100%

- **Study Approach**

Tutorial Session	15 hours
Self study (including online reading)	85 hours

Total:	100 hours

Do and Don't

- **Do not turn on your mobile**, pager or any form of alarm that will distract your fellow classmates.
- **Do not make any unnecessary noise** unless you have just found out you won a 3T!
- **Do turn up on time** to avoid unnecessary distraction.
- Do exchange ideas and discussions on assignments but **NOT copying**. You are here to LEARN not copy. You will be severely dealt with if caught cheating under the university disciplinary action.
- **Do enjoy and learn from the course.**

References

- Fundamentals of Database Systems by R. Elmasri and S. Navathe (4th Edition), published by Addison-Wesley, (ISBN: 0-321-20448-4)
- <http://www.Peter-Lo.com/Teaching/IT354>