

College/Institute/Centre : Management & Technology Department of : ...BIS.....

SESSION PLAN

<u>*Lecture</u> / Tutorial / Laboratory / Workshop

(* DELETE AS APPROPRIATE)

COURSE PARTICULARS	
#: S325	Title: Advanced Database (PIS)

Session Particulars			
#: 1	Title: Fundamental database concepts' review and the ER-Model	Hrs: 2	

LEARNING OUTCOMES / ABILITIES GAINED*		
#	Outcome Description	
1	DB definition and examples	
2	DBMS definition and examples	
3	DBS definition and examples	
4	The DB development phases	
5	The conceptual phase	
6	The ER-D	
7	Business Rules	
8	Entities	
9	Relationships	
10	PK's	
11	FK's	

Prepared by

Designation: Mrs. Name: Sara ELKheshin Sign: Date: 11/7/2010

Approved by

Designation: Dr. Name: Walid AbdelMoez Sign: Date: 11/7/2010

Lecture

Source Material:

Elmasri, R., and Navathe, S., **Fundamentals of Database Systems** (The Benjamin/Cummings Publishing Company, Inc., 2001) 5th Edition.

Supplementary Material : Projector, white board.

- 1. Data show and white board.
- 2. Power point presentations.

Educational Resources : Handouts, presentations, assignments.

- 1. Notes are submitted every lecture (mis.aast.edu/courses).
- 2. Written Assignments.

Tutorial / laboratory / Workshop (Delete as required)
Defined in the Lab Session Summary

SESSION PARTICULARS

Title: The EER-D

#: 2

Hrs: 2

	LEARNING OUTCOMES / ABILITIES GAINED*		
#	Outcome Description		
1	Supertype/Subtype relationship		
2	Common attributes		
3	Specialization		
4	Generalization		
5	Inheritance and its hierarchy		
6	Overlapping		
7	Disjointness		
8	Business rules		

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1 of 2

MPC3/3-1

Lecture

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- 4. <u>http://www.prenhall.com/mcfadden/</u>



	SESSION PARTICULARS		
#: 3	Title: Relational Model	Hrs: 2	

LEARNING OUTCOMES / ABILITIES GAINED*		
#	Outcome Description	
1	Introduction to the relational model	
2	Mapping ER-D into relational database	
3	Mapping EER-D into relational database	

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MPC3/3-1

Lecture

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SESSION PARTICULARS

#: 4

Title: SQL

Hrs: 2

LEARNING OUTCOMES / ABILITIES GAINED*		
#	Outcome Description	
1	SQL benefits and drawbacks	
2	The role of SQL during the DB development phases	
3	DDL; create schema, create table, create index, alter table, drop table, etc	
4	DML; select, insert into, delete, update	
5	DCL; grant, revoke	

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Designation: Dr. Name: Walid AbdelMoez Sign: Date: 11/7/2010

 $1 \ \text{of} \ 2$

MPC3/3-1

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	Session Particular	S	
#· 5	Title: Advanced SOL		

	LEARNING OUTCOMES / ABILITIES GAINED*		
#	Outcome Description		
1	Concepts of a view in SQL		
2	Specification of view in SQL		
3	View implementation and view update		

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MPC3/3-1

<u>Lecture</u>

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	Session Particulars	
#: 6	Title: Relational Algebra	Hrs: 2

	LEARNING OUTCOMES / ABILITIES GAINED*
#	Outcome Description
1	Codd's definition of the relational algebra
2	Basic Algebra
3	The 8 basic operators
4	The Closure property
5	Union
6	Intersection
7	Difference/Minus
8	Cartesian Product
9	Select/Restrict
10	Project
11	Joins
12	Divide
13	Others: semi join, semi minus, extend, group, ungroup, Tclose

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Name: Walid AbdelMoez Sign: Date: 11/7/2010

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12. Power point presentations.

Educational Resources: Handouts, presentations, assignments.



	Session Particulars	
#: 7	Title: Mid-term exam	Hrs: 2

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1	
	Mid Term Exam

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1 of 2

MPC3/3-1

Lecture

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Supplementary Material : Projector, white board.

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14. Power point presentations.

Educational Resources : Handouts, presentations, assignments.

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LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1	
	Translating SQL queries into relational algebra
2	Algorithms for external view
3	Algorithms for select and join operations
4	Algorithms for project and set operations
5	Implementing Aggregate operations and outer joins
6	
7	
8	
9	

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16. Power point presentations.

Educational Resources: Handouts, presentations, assignments.

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	SESSION PARTICULARS	
#: 9	Title: Optimization	Hrs: 2

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1	
	Combining operations using pipelining
2	Using heuristics in query optimization
3	Using selectivity and cost estimates in query optimization
4	Overview of query optimization in oracle
5	Semantic Query optimization

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MPC3/3-1

<u>Lecture</u>

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Supplementary Material: Projector, white board.

- 17. Data show and white board.
- 18. Power point presentations.

Educational Resources: Handouts, presentations, assignments.

18.Notes are submitted every lecture (mis.aast.edu/courses).



SESSION PARTICULARS

Title: Transaction Management and Recovery

Hrs: 2

LEARNING OUTCOMES / ABILITIES GAINED*		
#	Outcome Description	
1	Transactions	
2	Transaction recovery	
3	ACID property	
4	System recovery	
5	Media recovery	
6	Two-phase commit	
7	SQL facilities	

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1 of 2

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Supplementary Material: Projector, white board.

19. Data show and white board.

20. Power point presentations.

Educational Resources: Handouts, presentations, assignments.

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SESSION PARTICULARS

Title: Object-Oriented Database - OODB and OODBMS

Hrs: 2

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1	
	Overview
2	Identity, object structures, and type constructors
3	Encapsulation
4	Inheritance
5	Type hierarchies
6	Multiple inheritance
7	Polymorphism
8	Abstract class
9	Aggregation
10	Introduction to OODRMS
11	Current trends in OODBMS
12	How to implement OODB in an OODBMS

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1 of 2

MPC3/3-1

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Supplementary Material: Projector, white board.

21. Data show and white board.

22. Power point presentations.

Educational Resources: Handouts, presentations, assignments.

22.Notes are submitted every lecture (mis2.aast.edu/misdept). 23.Written Assignments.



SESSION PARTICULARS

Title: 12th week exam

LEARNING OUTCOMES / ABILITIES GAINED*		
#	Outcome Description	
1		
	12 th week exam	

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Date: 11/7/2010

Approved by **Designation:** Dr.

Name: Walid AbdelMoez Sign: Date: 11/7/2010

1 of 2

MPC3/3-1

Lecture

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Supplementary Material: Projector, white board.

- 23. Data show and white board.
- 24. Power point presentations.

Educational Resources: Handouts, presentations, assignments.

24.Notes are submitted every lecture (mis.aast.edu/courses).

25.Written Assignments.

#: 12

Hrs: 2



SESSION PARTICULARS

Title: Introduction to database for decision support

Hrs: 2

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1	
	The difference between TPS and DW
2	Organization needs
3	The various data modeling techniques
4	Which organizations need Data warehouse technologies?
5	How could the DW be of value?

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1 of 2

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Supplementary Material : Projector, white board.

25. Data show and white board.

26. Power point presentations.

Educational Resources : Handouts, presentations, assignments.



LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1	
	Introduction, definitions and terminology
2	Characteristics of data warehouse
3	Data Modeling for data warehouses
4	Building a data warehouse
5	Typical functionality of a data warehouse
6	Data warehouse versus views

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Hrs: 2

1 of 2

MPC3/3-1

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Supplementary Material : Projector, white board.

27. Data show and white board.

28. Power point presentations.

Educational Resources : Handouts, presentations, assignments.



LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1	
	What is data mining?
2	The difference between Data mining and KDD
3	The relationship between data mining and data warehousing
4	Data preprocessing
5	Coding
6	OLAP
7	Decision trees
8	GA
9	Association rules
10	Regression and correlations
11	Clustering
12	Reporting the knowledge found
13	
	What is data mining?
14	The difference between Data mining and KDD
15	The relationship between data mining and data warehousing

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Supplementary Material : Projector, white board.

29. Data show and white board.

30. Power point presentations.

Educational Resources : Handouts, presentations, assignments.



	Session Particulars	
<i>#</i> . 1 0		
#: 16	litle: Final Exam	Hrs: 2

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1	
	Final Exam

Designation: Mrs. Name: Sara ELKheshin Sign: Date: 11/7/2010 Approved by Designation: Dr. Name: Walid AbdelMoez Sign: Date: 11/7/2010

1 of 2

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Supplementary Material : Projector, white board.

31. Data show and white board.

32. Power point presentations.

Educational Resources : Handouts, presentations, assignments.

