

ZU/W1/7/11

Unit Code:	BDM 222
Unit Title:	ADVANCED DATABASE MANAGEMENT SYSTEMS
Program(s):	BSCIT/BBIT/BSE
Lecturer Name:	Muriithi Nicholas
Lecturer Contacts:	Email: Nicholas.muriuki@zitech.ac.ke 0728809648
Consultation Time	MONDAY 2PM

COURSE DESCRIPTION

This module looks at the advanced aspects of a database system environment and endeavors to explore issues relating to the relationship between database system and the characteristics of the applications that manipulate it. It exposes the learner to database management aspects in relation to the applications used to facilitate its design, implementation, access, security and user control. The unit demonstrates the various processes and activities that support the successful running of a database in order to achieve the objectives of an organization

Module Prerequisite

EXPECTED LEARNING OUTCOME

By the end of this unit you will be able to:

- Describe the features and characteristics of a database application
- Understand how to develop and implement a database
- Understanding how to administrate database systems
- Gain knowledge on how to implement security controls in databases

Module Schedule

Topic/Week	Instruction Time (Hrs)	Topic
1 Introduction	3	Introduction <ol style="list-style-type: none"> Database concepts Properties of a database Database management system Fact bases Database functions Database views Data models Client server architecture
2 Database design and	3	Database design and modelling

modelling		a) Design and development process b) Logical and physical database design
3 Performance modelling	3	Performance modelling a) Overview b) Modeling performance of a database
4 Database transactions	3	Database transactions a) Properties of a transaction b) Characteristics of a transaction c) States of a transaction d) Transaction management techniques e) Transaction anomalies
5 Concurrency control techniques	3	Concurrency control techniques a) Introduction b) Concurrency problems c) Concurrency control techniques
6 Distributed databases	4	Distributed database a) Components of a distributed database b) Advantages and disadvantages c) Types of DDBS d) Failures in DDBS e) Transparency f) Fragmentation and replication g) Design of DDBS h) Client-server Architecture i) Distributed transactions and management
WEEK 7	CAT 1	
7 Database administration	3	Database administration a) Introduction b) Role of database administrator c) Nature of database administration d) Database administration tools
8 Database security	3	Database security a) Overview b) Vulnerability Assessments and Compliance c) Security implementation challenges
9 Database recovery	4	Database recovery a) Recovery concepts b) Recovery techniques recovery algorithm

		c) Recovery in multidata base systems d) Database backup
10 SQL Syntax	4	SQL Syntax a) Introduction b) Syntax
11 SQL implementation	4	SQL implementation a) Syntax
WEEK 12	CAT 2	
12 SQL implementation	2	SQL implementation a) Syntax
13 Revision		
14 Final Exam		

Teaching and learning Methodologies:

Lectures, Presentations by members of the class, Case discussions, Tutorials, Assignments, Continuous assessment tests, Practical.

Instructional Materials/Equipment:

Textbooks and online materials, Oracle 10g or later version

ASSESSMENT CRITERIA

<i>Assessment Type</i>	<i>Frequency</i>	<i>Percentage</i>
<i>Assignment/presentation</i>	<i>2</i>	<i>10%</i>
<i>CATs</i>	<i>2</i>	<i>20%</i>
<i>Final Examination</i>	<i>1</i>	<i>70%</i>
<i>Total</i>		<i>100%</i>

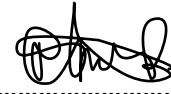
References/Reading List

1. C. J Date, (2012): An introduction to database system (8th ed), Pearson education inc Interactive Training Division IDM Computer Studies (2009): Database Management System Notes, Pvt Ltd
2. P. D. Beynon, (2014): Database Systems (3rd Ed) Palgrave Macmillan, New York
3. Ramakrishnan and Johannes, (2013): Database management systems (3rd ed), McGraw- Hill New York
4. S. K. Sudarshan (2013) Database System Concepts (4th ed), McGraw-Hill Companies

Approval for circulation by:

Lecture Name:.....Nicholas muriuki.....

signature:.....



Hod Name:.....Mr Daniel Njeru.....

signature:.....