

TECNIA INSTITUTE OF ADVANCED STUDIES

Grade 'A' Institute

Department of Information, Communication & Technology

Master Of Computer Applications (MCA)

Scheme and Syllabus (w.e.f. Academic Session 2020-21 onwards)

Course Code: MCA- 107

Course Name: DATABASE MANAGEMENT SYSTEMS

L T C

3 1 4

LEARNING OBJECTIVES:

In this course, the learners will be able to develop expertise related to the following: -

1. Develop a broad understanding of database concepts and database management system software, data models, schemas and instances, data constraints, relational algebra and calculus.
2. Acquire Knowledge to model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model.
3. Be able to write SQL and PL/SQL commands to create and manipulate database objects.
4. Be able to discuss importance of normalization and improve the database design by applying various normal forms.
5. Get in depth knowledge of concurrency control mechanisms, transaction management techniques and database security.

PRE-REQUISITES:

1. Elementary Maths (Sets, Relations).
2. Computer fundamentals related to memory organization such as primary memory, secondary memory etc.
3. Knowledge of basic data structures.
4. Basic knowledge of data storage and file management system

COURSE OUTCOMES (COs):

After completion of this course, the learners will be able to: -

CO #	Detailed Statement of the CO	BT Level	Mapping to PO #
CO1	Explain the various database components, models, DBMS architecture and Database Security.	BTL2	PO1, PO2, PO3
CO2	Apply relational database theory to construct relational algebra expression, tuple and domain relation expression for SQL queries.	BTL3	PO1, PO2, PO3, PO4, PO5
CO3	Construct advanced SQL queries on data and apply Procedural abilities through PL/SQL.	BTL4	PO1, PO2, PO3, PO4, PO5
CO4	Examine the use of normalization and functional dependency for database design.	BTL4	PO1, PO2, PO3, PO4, PO6, PO11, PO12
CO5	Explain the various database components, models, DBMS architecture and Database Security.	BTL5	PO1, PO2, PO3, PO4, PO6, PO8, PO10, PO11, PO12