Information Management Basics

Scheme of Instruction			Scheme of Examination		
Total duration	:	40 Hrs.	Max. Marks	:	100
Hours/Week	:	6	Internal Examination	:	30T+30P=30
Credits	:	5	SBT	:	10
Instruction Mode	:	Lecture and Practical	External Semester	:	60
Course Code	:	BS.05.201.26T	Exam Duration	:	3

Course Objectives:
Information Management software offers one end-to-end capabilities to manage data and content, pull together information from diverse sources, and gain valuable insights to optimize business processes.

At the core of IBM's software solution for information management is a powerful family of relational database management system (RDBMS) servers, which provides the right capabilities to manage data and support operational and analytic applications. The integrated data management portfolio provides a modular environment to design, develop, deploy, operate, optimize, and govern data, databases, and data-driven applications. IBM also provides a unified, powerful data warehousing and business intelligence software that gathers, manages, and analyzes data.

Information Management Basics course brings to the learners the features, functions, and services provided by DB2, a relational database management system. Topics covered include: installation; data modeling and design; relational databases; database query languages; relational database design; distributed databases; physical database design; information storage and retrieval; and mapping DB2 vis-à-vis other popular RDBMS

Course Outcomes:
At the end of the program, learners would be able to
- Understand concept of RDBMS & Query Languages
- Concepts of Data Modeling & Design of Relational Database

UNIT-I : Database Concepts & Basics of DB2

Database Concepts and Definitions: Data, Information, metadata, Database. DBMS, Advantages of Database Management System.

Basics of DB2: Introduction to DB2, DB2 Environment, Architecture of DB2, DB2 Physical Objects

Data Base Installation, Understanding Command Line & GUI Features of IBM DB2, Usage of Control Center.

UNIT II: Data Modeling & Relational Database Design Concepts

Data Modeling: Data Model, Purpose of Data Models, Entity Relationship Model: Entities, Attributes & Relationships.

Relational Database Design Concepts: Defining a Relation, Keys, Entity Integrity and Referential Integrity Concepts, Functional dependencies, Normalization, Normal Forms, Codd's Rules, De-normalization.

UNIT III: Database Objects & DDL, DML, DCL commands

Database Objects: Database, Tables, Table Spaces, Schema, Views, Indexes, Sequences.

DB2 data types. Data Definition Language, Data Manipulation Language, Data Control Language.

UNIT IV: Retrieving Data & Functions in Db2

Retrieving data from multiple tables: Joins, Union operations in DB2, Grouping, Sub Queries, DB2 Functions and Expressions, Scalar Functions, Column Functions, Row Functions.

UNIT V: DB2 Storage: Backup & Recovery

DB2 Backup & Recovery: DB2 Logging, DB2 Backup: Taking Backup from Control Center, Tablespace backup, Online / Offline Backups, Incremental / Delta backup, Database recovery using Control Center.

Import Utility, Export Utility, Load Utility , db2move Utility.

UNLOAD, LOAD, COPY, RECOVERY, REORG, RUNSTATS, STOSPACE

Basic Concepts of OLAP & Data Warehousing, Data Migration (DB2/Oracle/MS SQL/Sybase), Distributed Database in DB2

Text Books*:*
 IBM Career Education: Foundation Course in Information Management using IBM DB2

Reference Books*:*

1. IBM DB2 redbooks , IBM
2. IBM DB2 SQL – For Beginners ; Darmawikarta
3. DB2 Developers Guide , IBM Press
4. DB2 Essentials : Understanding DB2 in Big Data World
5. Beginning DB2 From Novice to Professionals , Grant Allen