

GENERIC ELECTIVES UNDER CBCS OFFERED BY DEPARTMENT OF CS&IT

Name of the Department/Centre:	Department of Computer Science & IT
Name of the Course:	Fundamentals of Information Technology
Course Code:	PGCS201SET
Semester in which Offered:	II
Nature of the Course:	Skill Enhancement
Credits :	2
Level at which Offered:	Postgraduate

Course Objectives with Expected Learning Outcomes:

The main purpose of this course is to enhance student's technical skills in terms of operating computers, Hardware, Software, and its applications. This course attempts to introduce the fundamentals of Information Technology, Categories of Machines, Servers, How Computers works. Introduction to Word Processing, creating, editing and saving documents, formatting features of word processing, working with tables, graphs and Excel sheet.

Introduction to file system and database, types of DBMS. Introduction to Access, creating a database and tables, entering and editing data, Sorting and Filtering and displaying data, creating and printing reports, labels, creating and viewing simple relationships. Basic knowledge of Networks and Internet Concepts: Benefits of Networks, Types of networks, Types of LAN, Components of LAN, Topology of LAN. The internet and World Wide Web, Sending and Receiving E-mail.

Pre-requisite(s), if Any:

Students should have a zeal to learn Computers & related Technologies
Open to all.

Name of the Course Advisor: Dr. Pradeep Kumar

E-Mail Address: drpkumar1402@gmail.com

Contact for Registration

Signature of the Head of the Department with Stamp

GENERIC ELECTIVES UNDER CBCS OFFERED BY DEPARTMENT OF CS&IT

Name of the Department/Centre:

Department of Computer Science & IT

Database Management System	THEORY : PGCS201GET	Lectures	Practicals	Total Credit
	LAB: PGCS250GEP	2	4	4

Name of the Course:

Database Management System with Lab

Course Code:

PGCS201GET, PGCS250GEP

Semester in which Offered:

II

Nature of the Course:

Generic Elective

Credits :

4 (2 Theory + 2 Lab)

Level at which Offered:

Postgraduate

Course Objectives: The Objective of this course is to provide:

1. Knowledge of DBMS, in terms of its uses and implementation.
2. Experience with analysis and design of database softwares
3. Understand the concept of data planing and database design for serving different types of users with varying skill levels.
4. Handling different user views of the same stored data, combining interrelated data controlling concurrent updates so as to maintain data integrity.
5. Managing, planning and coordinating restart and recovery operations across multiple users for a large complex systems.

Expected Learning Outcomes:

1. Understanding the relational database theory, and be able to write relational algebra expressions for queries, logical design of databases, including the E-R method and normalization approach.
2. Illustrate commercial relational database system by writing SQL.
3. Understanding various issues of transaction processing and concurrency control by designing and development of a database application system as part of a team.

Pre-requisite(s): Fundamentals of Information Technology (PGCS201SET)

Students should have the basic knowledge of file processing system with handling primitive operations like creating tables, entering and editing data, Sorting and Filtering and displaying data, creating and printing reports, labels, creating and viewing simple relationships.

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DATABASEMANAGEMENT SYSTEMS (DBMS) PGCS201GET

UNIT-I:File Systems and Databases : Data- Information- Database- DBMS: Types, Data Redundancy, DB Systems, DBMS Functions - Data Models: Entities, Attributes, Relationships, Business Rules- Overview of data models-Data abstraction: conceptual, internal, external models- The Relational Database Model:

Unit-II:ER Modeling: Entities, Relationships, Weak, Recursive, Composite, Super/Subtypes, Developing an E-R Diagram. Normalization:1NF, 2NF, 3NF, Refinement, BCNF, 4NF.

Unit-III:SQL, DDL, DML: Restrictions, Logical & Special operators, Order by, Aggregate functions, Grouping, views, Joins, Relational operators (union, intersect, minus), Join operators, Sub queries, Correlated queries, functions, Sequences, updateable views, PL/SQL, stored procedures.

UNIT-IV:Advance Database Object Oriented Databases: Object oriented concepts, OO data model, OODBMS- Web Database Development: Technologies, middleware, web server interfaces, client-side extensions. Temporal Database- The Data Warehouse: data warehouse rules, OLAP.

UNIT-V: Databases in Electronic Commerce: Styles, Architecture, Security, Payment Processing, XML, Database Design Example- Database Administration: Data as corporate asset, role of DBMS in organizations, DBA function, tools. Transaction Mgmt.: Properties, concurrency control, locking, time

References: 1. Database Systems: Design, Implementation & Management, 6th Ed, Rob/Coronel (course technology)

2. R. Ramakrishnan, Database Management Systems, McGraw Hill.

3. Korth&Silbewshatz, Database System Concepts, McGraw Hill.

4. Mike Morrison, Joline Morrison Guide to Oracle10g (course technology)

5. Oracle 10g ODS Forms II: Customizing Internet Applications (course technology)

PGCS250GEP: Oracle Practicals

1. Creation of table, inserting table values, alter table, update table, drop table.
2. Queries using select statement.
3. Nested queries. Correlated Queries
4. Oracle Functions
5. Procedures in SQL

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Fundamentals of Information Technology (PGCS201SET) : 2 Credits
Total marks = 50 (Internal Marks : 15 + External Marks : 35)

Course Objectives with Expected Learning Outcomes:

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Pre-requisite(s), if Any:

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UNIT-I: Computer Concepts and Applications

Introduction to Information Technology, Categories of Machines, Servers, How Computers work, Hardware-Input Hardware Processing and Memory Hardware, Storage Hardware, Output hardware, Software-System software, Application Software, History Input-Output devices, how the processor or CPU works- Control unit, ALU and Registers – How memory works – RAM, ROM, Flash, Floppy Disks, Hard disks, Optical Disks, Magnetic Tapes, Smartcards, Flash Memory Cards.

UNIT-II: Introduction to Software:

Introduction to Software: System Software- components of System software-The operating system, what it does- Booting, User interface, CPU Management, File Management, Task Management- Multitasking, Multiprogramming, Timesharing, Multiprocessing, Formatting, security Management- Other System software- Device Drivers and Utility Programs, Desktop and Laptop. Operating Systems- DOS, Windows, Network operating System- Netware, windows NT/2000, UNIX, Linux. Introduction to PC software- Dos, windows basics

UNIT-III: Application Software

Introduction to Word Processing, creating, editing and saving documents, formatting features of work processing, working with tables. Working with graphs, Mail merging, Previewing and Printing a document, Spell Check .Introduction to Electronic Spread Sheet, creating naming and saving of worksheets, Data Entry – Manual and Automatic formatting features, Different types of built-in functions, graphs, data management tools Presentation Software: Presentation basics, creating, saving and displaying

Data Base Management System: Introduction to a database, types of DBMS. Introduction to Access, creating a database and tables, entering and editing data, Sorting and Filtering and displaying data, creating and printing reports, labels, creating and viewing simple relationships

UNIT-IV: Data Communication, Networks and Internet Concepts:

Data Communication, Networks and Internet Concepts: Benefits of Networks, Types of networks, Types of LAN, Components of LAN, Topology of LAN, from Analog to the Digital Age. Internet Concepts- The internet and World Wide Web, Sending and Receiving E-mail, Search Engines, Other Internet Resources-FTP, Telnet, E-Commerce.

UNIT-V: Programming Concepts and Tools:

Programming Concepts and tools:-Introduction to Programming Concepts-Programming: Five step programming, Design the program, code the program, test the program, Document and maintain the program, Five generations of programming languages, Programming languages used today, Pseudo Code, MS-Publishing Tools-MS-Front Page .

Suggested Readings:

1. Alexis Leon & Mathew Leon: Introduction to Computers with MS-OFFICE-2000, TMH, -2001.
2. Williams/Sawyer: Using Information Technology 3. Peter Norton: Introduction to Computers

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