Govt. Shivalik College Naya Nangal

Teaching Plan (2021-22)   **Class: BCA-II(sem 3)**

Subject: Computer Applications   **Paper: CSA**

Name: POOJA DADWAL

Sr. No.	Dates	Topics
1.	**01-05 September**	Computer System Organisation: CPU Organisation.
2.	**07-12 September**	Instruction Execution (instruction cycle, types of instructions), RISC v/s CISC.
3.	**14- 19 September**	Design Principles for Modern Computers, Instruction level parallelism.
4.	**21-26 September**	Processor level parallelism.
5.	**28 September – 03 October**	Primary memory: Memory addresses, Error-correcting codes, Cache memory
6.	**05 -10 October**	Instruction Set Architecture: Instruction formats, Expanding opcodes, types of addressing modes, data transfer and manipulation instructions, Program control.
7.	**12-17 October**	(status-bit conditions, conditional branch instructions, program interrupt, types of interrupt)
8.	**19-24 October**	Register Transfer Language: Register Transfer, Bus and memory transfer, Arithmetic microoperations word, control memory (concepts only) Asynchronous Data transfer (strobe control, handshaking), modes of transfer (programmed I/O, interrupt-initiated I/O, software considerations), Direct memory access.
9.	**26-31 October**	, Logic micro-operations, Shift micro-operations, Arithmetic logic sift unit Micro-programmed control, control word
10.	**02-07 November**	Input-output Organisation- I/O interfaces (I/O bus and interface modules, I/O versus memory bus, isolated versus memory-mapped I/O).
11.	**09-14 November**	Asynchronous Data transfer (strobe control, handshaking).
12.	**16-21 November**	Mode of transfer (programmed I/O, interrupt-initiated I/O, software considerations), Direct memory access.
13.	**23 November -03 December**	MST Exams

Govt. Shivalik College Naya Nangal

Teaching Plan (2021-22)   **Class: BCA-II(sem 3)**

Subject: Computer Applications   **Paper: DBMS Theory**

Name: Pooja Dadwal

Sr. No.	Dates	Topics
1.	01-05 September	Introduction: Database Approach, Characteristics of a Database Approach, Database System Environment
2.	07-12 September	Roles in Database Environment: Database Administrators, Database Designers, End Users, Application Developers.
3.	14- 19 September	Database Management Systems: Definition, Characteristics, Advantages of Using DBMS Approach, Classification of DBMSs.
4.	21-26 September	Architecture: Data Models, Categories of Data Models Conceptual Data Models, Physical data Models, Representational Data Models, such as, Object Based Models, Record Based Models, Database Schema and Instance, Three Schema Architecture.
5.	28 September – 03 October	Data Independence – Physical and Logical data Independence. Database Conceptual Modelling by E-R model: Concepts, Entities and Entity Sets, Attributes, Mapping Constraints, E-R Diagram, Weak Entity Sets, Strong Entity Sets
6.	05 -10 October	Enhanced E-R Modelling: Aggregation, Generalization, Converting ER Diagrams to Tables. Relational Data Model: Concepts and Terminology.
7.	12-17 October	Characteristics of Relations. Constraints: Integrity Constraints- Entity and Referential Integrity constraints, Keys- Super Keys, Candidate Keys, Primary Keys, Secondary Keys and Foreign Keys.
8.	19-24 October	Relational Algebra: Basic Operations, Additional Operations, Example Queries.
9.	26-31 October	Database Design: Informal Design Guidelines for Relation Schemas, Problems of Bad Database
10.	02-07 November	Normalization: Functional Dependency, Full Functional Dependency, Partial Dependency, Transitive Dependency,
11.	09-14 November	Normal Forms– 1NF, 2NF, 3NF, Boyce-Codd NF, MS-ACCESS: introduction to MS-ACCESS, working with databases and tables, queries in Access,
12.	16-21 November	Applying integrity constraints, Introduction to forms, sorting and filtering, controls, Reports
13.	23 November -03 December	MST Exams

Govt. Shivalik College Naya Nangal

Teaching Plan (2021-22)   **Class: BCA-III(sem -5)**

Subject: Computer Applications   **Paper: SAD**

Name: Pooja Dadwal

Sr. No.	Dates	Topics
1.	**01-05 September**	Systems concepts: Definition and characteristics of a system, Elements of a system,
2.	**07-12 September**	Types of systems. The system development life cycle: Introduction to various phases.
3.	**14- 19 September**	The role of the Systems Analyst: Qualifications of a systems analyst, various roles of the systems analyst.
4.	**21-26 September**	Systems analysis: Initial investigation, needs identification, determining the user's information requirements.
5.	**28 September – 03 October**	Information-gathering tools
6.	**05 -10 October**	Structured analysis tools: Data flow diagram, Data dictionary, Decision treeSoftware maintenance: maintenance or enhancement, Primary activities of a m
7.	**12-17 October**	Structured English, Decision tables.
8.	**19-24 October**	Feasibility study: Feasibility considerations, Steps in Feasibility analysis.
9.	**26-31 October**	Database design. Implementation and software maintenance: Conversion,
10.	**02-07 November**	Input/output and forms design, Post-implementation review.
11.	**09-14 November**	Systems Design: The process and stages of systems design.
12.	**16-21 November**	Hardware and software selection: Procedure and major phases in selection.
13.	**23 November -03 December**	MST Exams

Govt. Shivalik College Naya Nangal

Teaching Plan (2021-22)   **Class: PGDCA-I(sem 1)**

Subject: Compute Applications   **Paper: operating system**

Name: Pooja Dadwal

Sr. No.	Dates	Topics
1.	**01-05 September**	**Introduction to operating System**: Definition, its need, services, early systems
2.	**07-12 September**	**Types of operating systems**: Batch processing operating system, Multiprogramming operating system,
3.	**14- 19 September**	Time Sharing operating system, Multi-tasking operating system, Distributed operating system, Network operating system, Real time operating system, Multi-processor system and parallel processing.
4.	**21-26 September**	**Process Management**: Process concept, types of Process scheduling, Basic concept of CPU Scheduling, Scheduling criteria, and
5.	**28 September – 03 October**	Scheduling algorithms: FCFS, SJF, Round Robin & Queue Algorithms.
6.	**05 -10 October**	**Deadlocks**: Deadlock definition and its characterization.
7.	**12-17 October**	**Windows:** MS-Windows: Operating system-Definition & functions, basics of Windows. Basic components of windows, icons, types of icons, and moving files and folders.
8.	**19-24 October**	taskbar, activating windows, using desktop, title bar, running applications, exploring computer, managing files and folders, copying
9.	**26-31 October**	Control panel – display properties, adding and removing software and hardware, setting date and time, screensaver and appearance. Using windows accessories
10.	**02-07 November**	**Linux**: History & Features of Linux, Linux Architecture, File System of Linux, Hardware Requirements of Linux,
11.	**09-14 November**	Various flavours of Linux, Linux Standard Directories, Functions of Profile and Login Files in Linux, Linux Kernel,
12.	**16-21 November**	**Linux Commands**: bc, cal, cat, cd, clear, cmp, cp,mv, date, find, ls, pwd, mkdir, more, rm, rmdir, chgrp, chmod, chown, tty, wc, who, whois, grep, telnet, vi editor etc.
13.	**23 November -03 December**	MST Exams

Govt. Shivalik College Naya Nangal

Teaching Plan (2021-22)   **Class: BCA-II(sem 4)**

Subject: Computer Applications   **Paper: RDBMS**

Name: Pooja Dadwal

Sr. No.	Dates	Topics
1.	01-06 February	Introduction to RDBMS Product and their Features, Difference between DBMS and RDBMS
2.	08-13 February	Relationship among application programs, RDBMS, Basic File Operations: Opening Files, Closing Files, Reading and Writing, Seeking
3.	15- 20 February	File Organization: Field and Record structure in file, Record Types, Types of file organization, Sequential, Indexed, and Hashed.
4.	22-27 February	Transaction Management: Transaction Concept, Properties, Transaction States, Concurrent execution.
5.	01– 06 March	Serializability, Conflict Serializability, View Serializability, Recoverability, Recoverable Schedule, Cascadless Schedule Concurrency Control: Lock Based Protocol,
6.	08 -13 March	Locks, Granting of Locks, Two Phase Locking protocol Timestamp Based Protocol, Timestamp, Timestamp ordering protocol, Thomas's Write rule
7.	15-20 March	Validation Based Protocol, Deadlock Handling, Deadlock Prevention, Deadlock Detection, Deadlock Recovery
8.	22-27 March	Recovery System: Failure Classification, Transaction Failure, System Crash, Disk Failure, Storage Structures, Storage Types, Data Access, Recovery & Atomicity, Log based Recovery.
9.	29 March – 03 April	Deferred Database Modification, Immediate Database Modification, Checkpoints, Recovery with Concurrent Transaction, Transaction Rollback, Restart Recovery, Remote Backup System Relational Query Language: DDL, DML, DCL. Introduction to Oracle: Oracle as client/server architecture, getting started, creating, modifying
10.	05-10 April	dropping databases. Inserting, updating, deleting data from databases, SELECT statement, Data constraints (Null values, Default values, primary, unique and foreign key concepts) Computing expressions, renaming columns, logical operators, range searching, pattern matching,
11.	12 -17 April	Oracle functions, grouping data from tables in SQL, manipulating dates.
12.	19-24 April	Working with SQL: triggers, use of data base triggers, database triggers Vs. SQL*forms, types of triggers, how to apply database triggers, BEFORE vs. AFTER triggers, combinations, syntax for creating and dropping triggers
13.	26 April-04 MAY	MST Exams

Govt. Shivalik College Naya Nangal

Teaching Plan (2021-22)   **Class: BCA-III(sem 6)**

Subject: Computer Science   **Paper: Operating System**

Name: Pooja Dadwal

Sr. No.	Dates	Topics
1.	01-06 February	Operating System – Definition, Need, Services, Types of operating systems
2.	08-13 February	Simple batch system, multi programmed batch system
3.	15- 20 February	Time sharing system, parallel system, distributed
4.	22-27 February	System, real time system, personal computer system. Operating system components,
5.	01– 06 March	operating system services, system calls.
6.	08 -13 March	Process Management – process definition, process state, process scheduling, operations on processes.
7.	15-20 March	Basic concepts of thread, Difference between process and thread.
8.	22-27 March	CPU Scheduling – Basic concepts, scheduling criteria,
9.	29 March – 03 April	scheduling algorithms – FCFS, SJF
10.	05-10 April	Round Robin and Multilevel queue scheduling
11.	12 -17 April	Class test
12.	19-24 April	Revision
13.	26 April-04 MAY	MST Exams

Govt. Shivalik College Naya Nangal

Teaching Plan (2020-21)   **Class: BCA III(sem 6)**

Subject: Computer Science   **Paper: Software Engg.**

Name: Pooja Dadwal

Sr. No.	Dates	Topics
1.	01-06 February	Introduction – The Problem Domain, Software Engg.Challenges, Software Engg.Approach
2.	08-13 February	Software development life cycle, its phases, Software development process models
3.	15- 20 February	Waterfall, Prototyping, Iterative; Software Process- Characteristics of software process, ,
4.	22-27 February	Project management process, Software configuration management process.
5.	01– 06 March	Project Planning – activities, COCOMO model. Class test-1
6.	08 -13 March	Software Metrics – Definition, Importance, Categories of metrics. Software Quality – Attributes,Cyclomatic complexity metric
7.	15-20 March	Software Requirements Analysis – Need for SRS, Data flow diagrams, Data Dictionary, entity relationship diagram, Characteristics and components of SRS, validation, metrics SECTION-B Software Design – Design principles, Module-level concepts, Structure Chart and Structured
8.	22-27 March	Design methodology,, verification, metrics : network metrics, information flow metrics. Coding – Programming Principles and Guidelines, Verification- code inspections, static analysis.Software Testing – testing fundamentals, Black Box Testing : Equivalence class
9.	29 March – 03 April	Tes partitioning, Boundary value analysis, cause-effect graphing; White Box Testing : Control flow and Data flow based testing, mutation testing; levels of testing, test plan, test case ting – testing fundamentals, Black Box Testing : Equivalence class
10.	05-10 April	specification, test case execution and analysis, Software maintenance – Categories of maintenance.Software Reliability – Definition, uses, of reliability studies.
11.	12 -17 April	Class test 2
12.	19-24 April	Revision
13.	26 April-04 MAY	MST Exams