Nalbari College, Nalbari

Teaching Plan for the Session: 2022-23

Name of the Teacher: DHRUBA MISHRA

Department: COMPUTER SCIENCE Semester: I

Paper Name: Introduction to Office Automation

Paper: PGDCA P4

Learning Objectives:

- Able to perform documentation and presenting skills.
- Proficient in using Windows, Word Processing Applications, Spreadsheet Applications,¬ Database Applications and Presentation Graphics Application.

Sl. No of Lecture	Topic/Subtopic	Learning Resources	Mode of Teaching & ICT Tools	Experiential/Participating Learning Used	Mode of Assessment for CIE
1	Introduction to Word Processing , Features , Learning document window, Creating , Saving & Closing a document, Opening an Existing document ,	Reference books, e-books etc.	Blackboard, Lab and PPT is used for illustrations and lecture Methods	Practical , Home assignment etc.	Class test, presentation

	Editing a Document				
2	Formatting Features (Paragraph Formats, Aligning text & paragraph, Border and Shading, Header & Footers, Bullet & Numbering)				
3	Inserting & Editing a Table , Inserting Picture, Checking & Spelling Correction, Page Setup , Print Preview , Printing a document , Mail Merge , Document Template & Wizards.				
4	Introduction to Spreadsheet, creating, saving and editing a workbook, Inserting, deleting Worksheets, Opening & Moving around in an existing worksheets, Working with Formula				
5	Cell referencing. Functions, Working with ranges - creating, editing and selecting ranges.				

	Format Feature :: AutoFormat Feature, Changing alignment, Character styles, Date Format, Border & Colors etc				
6	Previewing & Printing a worksheet, Creating Charts & Graphs. Database in worksheet, macro, linking and embedding				
7	Creating & saving Presentations , Opening an existing Presentation, Working in different views, Working with slides				
8	Adding and Formatting Text, Formatting Paragraphs, Checking Spelling and correcting typing mistakes , Adding clip art and other pictures,				
9	Inserting Animation, Designing slide shows,				

	Running and controlling slide show, Printing Presentation.				
10	storing, creation, conversion.				
11	Local language pack in Office Packages: installation and use.				
12	Declaration and accessing of one & two-dimensional arrays				
13	Document design using any DTP package. Graphics design and manipulation using any currently available package.				

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Teaching Plan for the Session: 2022-23

Name of the Teacher: DHRUBA MISHRA

Department: COMPUTER SCIENCE Semester: 2

Paper Name: computer graphics

Paper: PGDCA L3

Learning Objectives:

- Understands the core concepts and mathematical foundations of computer graphics.
- Knows fundamental computer graphics algorithms and data structures.
- Has an overview of different modeling approaches and methods.
- Has detailed knowledge about basic shading and texture mapping techniques.

Sl. No of Lecture	Topic/Subtopic	Learning Resources	Mode of Teaching & ICT Tools	Experiential/Participating Learning Used	Mode of Assessment for CIE
1	Introduction : Types and Applications of computer graphics Graphic Devices.	Reference books, e-books etc.	Blackboard, Lab and PPT is used for illustrations and lecture Methods	Practical , Home assignment etc.	Class test, presentation
2	Input devices - Keyboard, Mouse, Trackball and Space ball,				

	Joysticks, Data Glove, Digitizers, Image scanners, Touch Panels, Light pens.				
3	Output devices - Raster Scan displays, Refresh CRT, Video Controller, Raster Scan display, Processor Digital frame buffer.				
4	Penetration CRT, Color look-Up tables. Flat panel displays VGA and SVGA resolutions.				
5	Output primitives and 2-d transformation Line Driving Algorithms: DDA algorithms Bresenhan's Line Algorithm				
6	Matrix representations and use of homogeneous coordinate systems. Translation, rotation, scaling, mirror reflection.				
7	Rotation and scaling about an arbitrary point, composite transformation, Zooming and panning				

8	Segmented curve and smooth curve drawing algorithm Window and clipping Clipping operations and algorithm				
9	Filling Concept of 3-D graphics				
10	Hidden Surface removal Introduction to Multimedia				

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Teaching Plan for the Session: 2022-23

Name of the Teacher: ANKUR BAISHYA

Department: COMPUTER SCIENCE Semester: 1

Paper Name: DATABASE MANAGEMENT SYSTEM

Paper: PGDCA P5

Learning Objectives:

1. Describe the fundamental elements of relational database management systems
2. Explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL.
3. Design ER-models to represent simple database application scenarios
4. Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data.
5. Improve the database design by normalization.

Sl. No of Lecture	**Topic/Subtopic**	**Learning Resources**	**Mode of Teaching & ICT Tools**	**Experiential/Participating Learning Used**	**Mode of Assessment for CIE**
1	Definition of Database, characteristics of database approach Advantages of DBMS	Reference books, e-books etc.	Blackboard, PPT is used for mathematical Computation and	Practical , Home assignments, Seminar presentations etc.	Class Test.
2	E-R model as a tool for				

	conceptual design- entities, attributes and relationships, weak entity and strong entity, Relational Models		illustrations using lecture Methods		
3	Relational DBMS, RDBMS terminology, primary key and foreign key Relational database design Integrity constraints				
4	functional dependencies, Normal forms (1NF, 2NF, 3NF, BCNF)				
5	Introduction to SQL, Advantages of SQL, Data types & literals, Creating tables & Inserting				
6	Deleting and Updating Records, Types of SQL commands, SQL Operators and their precedence.				
7	Deleting and Updating Records, Types of SQL commands, SQL Operators and their				

	precedence.				
8	Queries and sub queries, Use of Built-in functions, Aggregate Queries				
9	Join Operations in SQL. Application Programming Interfaces and integration of front end and back end.				

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Teaching Plan for the Session: 2022-23

Name of the Teacher: ANKUR BAISHYA

Department: COMPUTER SCIENCE Semester: 2

Paper Name: INTERNET AND WEB TECHNOLOGY

Paper: PGDCA P7

Learning Objectives:

1. Students are able to develop a dynamic webpage by the use of java script and Students will be able to connect a java program to a DBMS and perform insert.
2. Students will be able to write a well formed / valid XML document.
3. DHTML. Students will be able to write a server side java application called Servlet to catch
4. update and delete operations on DBMS table. Students will be able to write a server side java application called JSP to catch form
5. form data sent from client, process it and store it on database. data sent from client and store it on database.

Sl. No of Lecture	Topic/Subtopic	Learning Resources	Mode of Teaching & ICT Tools	Experiential/Participating Learning Used	Mode of Assessment for CIE
1	Internet, Growth of internet, Anatomy of	Reference books, e-books	Blackboard, PPT is used for	Practical , Home assignments, Seminar	Class Test.

	internet , History of WWW and basic internet terminologies ., Browsers , Electronic mail .	etc.	mathematical Computation and illustrations using lecture Methods	presentations etc.	
2	Internet Applications : Commerce on the internet , Governance on the internet , Impact of internet on society .				
3	What is networks ? Need of computer networks. Characteristics of LAN, MAN, WAN . A brief idea of OSI reference model and TCP/IP . Difference between OSI and TCP/IP.				
4	Physical topologies (Bus , Ring , Tree , Star , Hybrid etc ..) Logical topologies (protocols) A brief description of Ethernet, FDDI , ATM , Token ring				
5	Introduction to FTP & terminologies, FTP servers and				

	authentication				
6	GUI based FTP clients, Browser based FTP clients.				
7	Overview of internet security, Firewalls.				
8	Internet security management concepts & information. Privacy & copyright issues.				
9	Introduction to HTML, basics & elements of HTML, attributes, headings				
10	paragraphs, links, Images, Lists, Tables, Forms, Frames				
11	Client side scripting: Introduction to JavaScript & its basics, data types				
12	variables operators, functions looping, objects, arrays, strings.				
13	Introduction to PHP, basic programming				

	principles & database connectivity.				

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Teaching Plan for the Session: 2022-23

Name of the Teacher: HIRAK BARMAN

Department: COMPUTER SCIENCE Semester: I

Paper Name: ICT HARDWARE

Paper: PGDCA P1

Learning Objectives:

- Indicate the names and functions of hardware ports and the parts of the motherboard.
- Identify the names and distinguishing features of different kinds of input and output devices.
- Describe how the CPU processes data and instructions and controls the operation of all other devices.

Sl. No of Lecture	**Topic/Subtopic**	**Learning Resources**	**Mode of Teaching & ICT Tools**	**Experiential/Participating Learning Used**	**Mode of Assessment for CIE**
1	Fundamentals: Block Diagram of a Computer, CPU, Memory (Primary/Secondary)	Reference books, e-books etc.	Blackboard, Lab and PPT is used for illustrations	Practical , Home assignment etc.	Class test, presentation

2	RAM, ROM, Hardware, Software, Representation of Information,		and lecture Methods		
3	Number Systems-binary, octal, hexadecimal, ASCII, EBDIC, Gray codes.				
4	Evolution of computer system, Modern computer, Classification of computer,				
5	Personal Computer hardware: Monitor, Keyboard, Mouse, Scanner, printer, speaker				
6	Hard Disk Drive: logical structure and file system, FAT, NTFS. Hard disk tools: Disk cleanup, error checking, de fragmentation				
7	scanning for virus, formatting, installing additional HDD. New trends in HDD. Floppy Disk Drive				
8	Optical Media, CDROM,				

	theory of operation, drive speed, buffer, cache, CD-r, CD-RW, DVD ROM,				
9	DVD technology, preventive maintenance for DVD and CD drives, New Technologies. Driver installation, Writing and cleaning Cd and DVD.				
10	Processor: Intel processor family. Latest trends in processor, Motherboard, Sockets and slots, power connectors. Peripheral connectors. Bus slots, USB, pin connectors.				
11	Different kinds of motherboards. RAM, different kinds of RAM. RAM up gradation**.** Cache and Virtual Memory concept.				
12	SMPS. BIOS. Network Interface Card, network cabling, I/O Box, Switches				

13	RJ 45 connectors, Patch panel, Patch cord, racks, IP address.				

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Teaching Plan for the Session: 2022-23

Name of the Teacher: HIRAK BARMAN

Department: COMPUTER SCIENCE Semester: I

Paper Name: OVERVIEW OF OPERATING SYSTEM

PAPER: PGDCA P3

Learning Objectives:

- Know basic components of an operating system.
- Comprehend how an operating system virtualises CPU and memory.
- Discuss various scheduling and swapping policies.
- Learn basic concurrent programming in C and assembly code.
- Explain how a simple file system organizes data in the hard disk.

Sl. No of Lecture	**Topic/Subtopic**	**Learning Resources**	**Mode of Teaching & ICT Tools**	**Experiential/Participating Learning Used**	**Mode of Assessment for CIE**
1	What is operating system? Types of operating system, (Batch, multiprogramming, time	Reference books, e-books etc.	Blackboard, Lab and PPT is used for illustrations and lecture	Practical , Home assignment etc.	Class test, presentation

	sharing, real time system) Functions of OS		Methods		
2	Operating system as resource manager.				
3	main files, DOS Commands-Internal Commands & External Commands.				
4	Batch files.Config.sys and Autoexec.bat file.				
5	An overview of different versions of windows, Basic windows elements. File management through windows.				
6	Widows accessories, windows Explorer, Entertainment system tools, Understanding OLE.				
7	Introduction to Linux, Files and directories, architecture(kernel, shells, utilities)				
8	various Linux commands. File manipulations, redirection and filters ,				

	editors(vi, ed etc.)				
9	Concept of process, System administration: File system, system administration commands.				

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Teaching Plan for the Session: 2022-23

Name of the Teacher: PRANJAL DUTTA

Department: COMPUTER SCIENCE Semester: I

Paper Name: PROGRAMMING IN C

Paper: PGDCAP2

Learning Objectives:

- Be familiar with fundamental programming concepts and methodology (variables, assignments, conditions, branches, loops, functions, recursions, structures).
- Be familiar with and appreciate good programming practice, and apply it to follow-up courses.
- Be able to apply problem-solving knowledge and skills to write small, well-documented, effective C programs.
- Be able to appreciate the use of simple data structure such as array, know their limitations to pave way for more complex data structures in the next course.
- Know the responsibilities of an ethical programmer.

Sl. No of Lecture	Topic/Subtopic	Learning Resources	Mode of Teaching & ICT Tools	Experiential/Participating Learning Used	Mode of Assessment for CIE
1	Algorithm, Flowchart	Reference	Blackboard,	Practical , Home	Class test,

	Programming Languages (Machine language, Assembly language	books, e-books etc.	Lab and PPT is used for illustrations and lecture Methods	assignment etc.	presentation
2	High Level Language) Translators (Assembly, Compiler, Interpreter) Algorithm for Problem Solving				
3	Introduction to C Language Data types, Operators, Conditional Statements & Loops Function, parameter passing				
4	Arrays, Pointers(programs using array and pointers like sum, average, minimum, maximum of numbers of an array				
5	add and delete an element of an array, merge two sorted arrays ,string manipulation				
6	programs like addition and their combination, sum of rows, columns and diagonal elements of matrix, transpose of				

	matrix)				
7	Structures (Declaration and use, structure member resolution				
8	structure pointer resolution) and union				
9	File Processing (file in C- opening, closing, reading and writing of files)				

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Teaching Plan for the Session: 2022-23

Name of the Teacher: PRANJAL DUTTA

Department: COMPUTER SCIENCE Semester: 2

Paper Name: Data Structure through C Language

Paper: PGDCA P6

Learning Objectives:

1. To provide the knowledge of basic data structures and their implementations.
2. To understand importance of data structures in context of writing efficient programs.
3. To develop skills to apply appropriate data structures in problem solving.

Sl. No of Lecture	**Topic/Subtopic**	**Learning Resources**	**Mode of Teaching & ICT Tools**	**Experiential/Participating Learning Used**	**Mode of Assessment for CIE**
1	Basic concept, Abstract data types	Reference books, e-books etc.	Blackboard, Lab and PPT is used for illustrations and lecture Methods	Practical , Home assignment, seminar etc.	Laboratory work for practice , Quizzes, class tests
2	Fundamental and derived data types. Representation, primitive data structures.				
3	Single and multidimensional arrays. Address calculation using column and row major ordering.				
4	Various operations on				

	Arrays. Matrix multiplication.				
5	Resprestation of stacks and queue using arrays and linked-list. Circular queues.				
6	Conversion from infix to postfix and prefix expressions, postfix evaluation algorithm				
7	Singly linked list; operations on Linked-list . Circluar linked lists, Doubly linked lists.				
8	Basic terminology, Binary tree traversal methods - Preorder, Inorder and Postorder . Application of binary tree, Binary search tree				
9	insertion and search operations on binary search tree.				
10	Searching: Sequential and binary searches.				
11	Sorting - Insertion, selection, bubble, quick,				

	merge, radix.				
12	Definition of Graph, Graph terminology, Directed				
13	Undirected & Weighted graphs. Graph representation: Adjacency matrix, Adjacency lists.				

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