

Department of Computer Science, GCW, Hisar

Lesson Plan Session Aug 2022 to Dec 2022

Name of Teacher: Amit Bansal

Class: - BSc-1st Sem

Subjects: - Programming in C

Date	Topics
August and September-2022	Introduction to C Programming: History of C, Character Set, Identifiers and Keywords, Constants, Types of C Constants, Rules for Constructing Integer, Real and character Constants, Variables, Data Types, rules for constructing variables. Input/output: Unformatted & formatted I/O function, Input functions: scanf(), getch(), getche(), getchar(), gets(); output functions: printf(), putchar(), puts(). Operators and Expressions: Arithmetic, relational, logical, bitwise, unary, assignment, conditional operators and special operators, Type Conversion in Assignments, Hierarchy of Operations, Structure of a C program.
Oct-2022	Decision Control Structure: Decision making Decision making with IF statement, IF-ELSE statement, Nested IF statement, ELSE-IF ladder. Loop Control Structure: While and do-while, for loop and Nested for loop, Case Control Structure: Decision using switch; goto, break and continue statements. Functions: Library functions and user defined functions, Global and Local variables, Function Declaration, Calling and definition of function, Methods of parameter passing to functions, recursion, Storage Classes in C.
November-2022	Arrays: Introduction, Array declaration, Accessing values in an array, Initializing values in an array, Single and Two Dimensional Arrays, Initializing a 2-Dimensional Array, Passing array elements to a function: Call by value and call by reference, Arrays of characters, Insertion and deletion operations, Searching the elements in an array, Using matrices in arrays, Passing an Entire Array to a Function. Pointers: Pointer declaration, Address operator "&", Indirection operator "*", Pointer and arrays, Pointers and 2-Dimensional Arrays, Pointer to an Array, Passing 2-D array to a Function, Array of Pointers. Dynamic Memory Allocation: malloc(), calloc(), realloc(), free() functions.
December-2022	String Manipulation in C: Declaring and Initializing string variables, Reading and writing strings, String Handling functions (strlen(), strcpy(), strcmp(), strcat(), strrev()). Structures and Unions: Declaration of structures, Structure Initialization, Accessing structure members, Array of structure, Nested structures, Structure with pointers, Union. Files in C: Introduction, Opening and Closing files, Basic I/O operation on files.

Lesson Plan Session Aug 2022 to Dec 2022

Name of Teacher: Vipin Babbar

Designation:- Assistant Professor of Computer Sc.

Class: BSc-1st Sem Computer Science

Paper: Computer Fundamentals

Date	Topics
22 august 2022 to 30 sept 2022	Introduction to Computers, Definition, components of Computer, Components of Computer, Characteristics of computers, Input Devices introduction, Keyboard, Mouse, Joystick, Track ball, light Pen, OMR, OCR, MICR, Scanners, Web Camera etc., Output Device introduction, Printer introduction, Character Printers, Line printers, Page printers, Plotters, Monitor Introduction to memory, Memory Hierarchy, Types of Main memory, RAM, ROM, Cache Memory, Introduction to secondary storage devices, Magnetic disk, Magnetic Tape, Floppy Disk. Optical Disk, CD, DVD
01 Oct 2022 to 31 Oct 2022	Introduction to MS-Word, MS-Word window, Application software, Utility Software. Create and save a file, save and save-as, Editing a document, Introduction to Programming Languages, Machine Language, Assembly Language, High level Language. Table in Ms Word. Compiler and Interpreter, Introduction to Operating System, Functions of OS Formatting a document, , Macro, Mail Merge Introduction to MS-Excel and its window, Data types, Creating and saving a workbook Operating systems for Tabs, mobile phones, Protecting a workbook, Editing worksheet, autofill, Cut, Copy, and Paste, Formatting a worksheet., Formatting a Number, Creating Charts, Built-in-Functions, Data Tables, Macro, etc
01 Nov 2022 to 30 Nov 2022	Creating a new presentation, Different views of Powerpoint, Insert, cut, paste, move, copy, delete slide, Creating a new presentation using built-in template Adding Picture, shapes , audio, video etc into slides, Applying Animation and Slide show Introduction to Computer Software, Types of Computer Software, System Software. Types of Operating System, Real time applications, Batch Operating System Multiprogramming Operating System, Time Sharing Operating System, Multiprocessing Operating System .
01 Dec 2022 to 31 Dec 2022	Internet basics, web browsers, web servers, HTTPs, IP, Email basics, computer network, Types of computer networks, Transmission media, Network topologies, Cloud computing

Lesson Plan Session Aug 2022 to Dec 2022

Name of Teacher: Garima Mann

Class: BSc-3rd Sem

Paper: DBMS

Month	Topics
Aug-Sept 2022	A Historical perspective, File Systems vs. DBMS, Characteristics of the Data Base Approach, Abstraction and Data Integration, Database users, Advantages and Disadvantages of DBMS, DBMS architecture, Data Models, Schemas and Instances, Data Independence. Entity Relationship (ER) Model: Basic Concepts-Entity, Attributes, Types of Attributes, Entity set and Keys; Relationships-Relationship set, Degree of Relationship,
OCT-2022	Mapping Cardinalities. ER diagram representation-Representation of Entity, Attributes and Relationship. Binary Representation and Cardinality, Participation Constraints.
Nov-2022	Relational Model : Relational model concepts (Tables, Tuple, Relation instance, Relation schema, Relation key, Attribute domain), Constraints- Key constraints, Domain constraints, Referential integrity constraints; Relational algebra, Basic operations: Select, Project, Union, Set difference, Cartesian product, Rename. SQL: Why SQL, Data Types; DDL-Create, Alter and Drop table Commands. DML-SELECT/ FROM/ WHERE, INSERT INTO/ VALUES, UPDATE /SET/ WHERE, DELETE Commands. UNION [ALL], INTERSECTION and MINUS Operators.
Dec-2022	Relational Database design: Mapping ER model to relational database, functional dependencies, Lossless decomposition, Desirable properties of decomposition, Normal forms (1 NF, 2 NF, 3 NF and BCNF). Revision of the syllabus

Lesson Plan Session Aug 2022 to Dec 2022

Name of Teacher: Garima Mann

Class: BSc-3rd Sem

Paper: Operating system

Month	Topics
Aug, Sept -2022	<p>Structure of Operating Systems: Layers-MS-DOS Layer Structure, Traditional UNIX System Structure; Running Multiple Operating Systems, Running a Virtual Operating System, Operating System Modes, System Boot.</p> <p>Process Management: Introduction to Process, Attributes of a process, Process States, Operations on the Process, Process Schedulers, CPU Scheduling, Scheduling Algorithms, Purpose of a Scheduling algorithms, Introduction to FCFS, Shortest Job First (SJF), Shortest Job First (SJF), Round Robin Scheduling Algorithms.</p>
Oct-2022	<p>Memory Management: Fixed and Dynamic partition, Physical and Logical Address Space, Page Table, Mapping from page table to main memory, Page Table Entry, Size of the page table, Finding Optimal Page Size. Virtual Memory Concepts, Advantages and disadvantage of Virtual Memory. Segmentation, Translation of Logical address into physical address by segment table, Advantages and disadvantage of Segmentation. Paging VS Segmentation.</p>
Nov-2022	<p>File Management: Attributes of File, Operations on File; File Access Methods- Sequential, Direct and Indexed Access; Directory Structure, File Systems, File System Structure- different layers; Master Boot Record, Directory Implementation-Linear List and Hash Table; Disk space Allocation Methods- Contiguous Allocation and FAT.</p> <p>Shell introduction and Shell Scripting: What is shell and various type of shell</p>
Dec-2022	<p>Shell introduction and Shell Scripting Various editors present in Linux/Unix; Different modes of operation in vi editor; Shell script, Writing and executing the shell script, Shell variable (user defined and system variables); System calls, Pipes and Filters, Decision making in Shell Scripts (If else, switch), Loops in shell, Utility programs (cut, paste, join, tr , uniq utilities), Pattern matching utility (grep)</p>

Lesson Plan Session Aug 2022

to Dec 2022

Name of Teacher: Mr. Amit Bansal

Class: - BSc-5thSem

Subjects:-Data Analytics

Date	Topics
August and September-2020	Data Analytics: Introduction to Data Analytics, Business Intelligence (BI) for better decisions, Decision types, BI tools, BI skills, BI applications. Data warehousing: Introduction to Data warehousing (DW), Design considerations for DW, DW development approaches, DW architecture. Data Mining: Introduction to Data mining, Data cleaning and preparation, outputs of Data Mining, evaluation of data mining results, Data Mining Techniques.
October-2020	Decision Trees: Introduction to Decision tree, Decision tree problem, Decision tree construction, Lessons from constructing trees, Decision tree algorithms. Regression: Introduction, Correlations and Relationships, Visual Look at Relationships Logistic regression, Advantages and disadvantages of regression models. Artificial Neural Networks: Introduction, business applications of ANN, Design principles of an ANN, Representation of a neural network, Architecting a neural network, Developing an ANN, Advantages and disadvantages of using ANN.
November-2020	Cluster analysis: Introduction, Applications of cluster analysis, Definition of a cluster, Representing clusters, Clustering techniques, K-means algorithm for clustering, Selecting the number of clusters. Association rule Mining: Introduction, Business applications of association rules, Representing association rules, Algorithms for association rule, Apriori algorithm, Creating association rules. Web Mining: Introduction, Web content mining, Web structure mining, Web usage mining, Web mining algorithms.
December-2020	Big data: Introduction, Defining big data, Big data landscape, Business implications of big data, Technology implications of big data, Big data technologies, Management of big data. Naïve-base analysis: Introduction, Probability, Naïve base model, Text classification example. Support vector machines: Introduction, SVM model, The kernel method,

Lesson Plan Session Aug 2022 to Dec 2022

Name of Teacher: Vipin Babbar

Designation:- Assistant Professor of Computer Sc.

Class: B.Sc-5th Sem (Computer Sc.) Paper: Object oriented Programming using C++

Date	Topics
22 august 2022 to 30 sept 2022	Procedure Oriented Programming, Object-Oriented programming Paradigm, difference between Procedure Oriented Programming and Object-Oriented programming, Basic concepts of Object-Oriented programming, Benefits of OOP, Object Oriented Languages, and application of OOP. Structure of a C++ Program, Insertion operator, Extraction operator, Hierarchy of Console Stream Classes, Unformatted and Formatted I/O Operations, Manipulators, inline functions.
01 Oct 2022 to 31 Oct 2022	C structure revisited, specifying a Class, Creating Objects, Defining member function, Memory allocation for objects, Scope resolution operator and its significance, Static Data Members, Static member functions, Friend Function, Friend Class.
01 Nov 2022 to 30 Nov 2022	Dynamic Memory Management using new and delete Operator , Constructor, type of constructors, Dynamic initialization of objects, Constructor overloading, Constructor with default arguments, Destructors, function overloading, Operator Overloading, Overloading unary and binary operators.
01 Dec 2022 to 31 Dec 2022	Inheritance, Single Inheritance, Making a private member inheritable, Multilevel Inheritance, Multiple Inheritance, Hierarchical Inheritance, Hybrid Inheritance, Virtual Base Class, Abstract Classes, Constructors in derived classes.

Lesson Plan Session Aug 2022 to Dec 2022

Name of Teacher: Amit Bansal/Vipin Babbar

Class: BCom-1st Sem

Paper: Computer Application in Business

Date	Topics
22 august 2022 to 30 sept 2022	<p>Introduction to Computers, Definition, components of Computer, Components of Computer, Characteristics of computers, Input Devices, Output Devices, Introduction to memory, Memory Hierarchy, Types of Main memory, RAM, ROM, Cache Memory, Introduction to secondary storage devices, Magnetic disk, Magnetic Tape, Floppy Disk. Optical Disk, CD, DVD, Comparison between different memories.</p> <p>Start Button, Display Properties, Manage files and folders, Introduction to windows, desktop, icon, My Computer, My Document, Recycle Bin, Introduction to modern CPU and processors, Revision and doubts of students, Test, Accessories, Installing/uninstalling a printer and other software</p>
01 Oct 2022 to 31 Oct 2022	<p>Introduction to modern CPU and processors, Introduction to Computer Software, Types of Computer Software, System Software. Introduction to MS-Word, MS-Word window, Application software, Utility Software.</p> <p>Create and save a file, save and save-as, Editing a document, Table in Ms Word, Macro, Mail Merge</p>
01 Nov 2022 to 30 Nov 2022	<p>Concept of Data and information, Information system, Effects of IT on business, Types of information system : TPS, and MIS</p> <p>Introduction to MS-Excel and its window, Data types, Creating and saving a workbook</p> <p>Protecting a workbook, Editing worksheet, autofill, Cut, Copy, and Paste, Formatting a worksheet., Formatting a Number, Creating Charts, Built-in-Functions, Data Tables, Macro, etc.</p>
01 Dec 2022 to 31 Dec 2022	<p>Creating a new presentation, Different views of Powerpoint, Insert, cut, paste, move, copy, delete slide, Creating a new presentation using built-in template Adding Picture, shapes , audio, video etc into slides, Applying Animation and Slide show</p> <p>Introduction to E-Commerce, E-Commerce and WWW, E-Commerce applications, E-Commerce Models B2B, B2C, C2C.</p> <p>M-Commerce and e-governance: an overview.</p> <p>Online payment system, Payment gateways, Risk management options for e-payment system, Plastic money: Debit and Credit cards and other smart cards, Digital certification and Digital signature.</p>