GOVERNMENT COLLEGE BAHADURGARH

LESSON PLAN FOR SESSION 2021-22

Subject Name with code and semester:- BCA-106 : 'C' PROGRAMMING, Semester: 2nd

Teacher Name:- Mr. Pradeep Kumar

MONTH	TOPIC
MARCH	Overview of C: History of C, Importance of C, Elements of C: C character set, identifiers and keywords, Data types, Constants and Variables, Assignment statement, Symbolic constant, Structure of a C Program, printf(), scanf() Functions, Operators & Expression: Arithmetic, relational, logical, bitwise, unary, assignment, shorthand assignment operators, conditional operators and increment and decrement operators
APRIL	Arithmetic expressions, evaluation of arithmetic expression, type casting and conversion, operator hierarchy & associativity. Decision making & branching: Decision making with IF statement, IF-ELSE statement, Nested IF statement, ELSE-IF ladder, switch statement, goto statement. Decision making & looping: For, while, and do-while loop, jumps in loops, break, continue statement, Nested loops.
MAY	Functions: Standard Mathematical functions, Input/output: Unformatted & formatted I/O function in C, Input functions viz. getch(), getche(), getchar(), gets(), output functions viz., putch(), putchar(), puts(), string manipulation functions. User defined functions: Introduction/Definition, prototype, Local and global variables, passing parameters, recursion.
JUNE	Arrays, strings and pointers: Definition, types, initialization, processing an array, passing arrays to functions, Array of Strings. String constant and variables, Declaration and initialization of string, Input/output of string data, Introduction to pointers. Storage classes in C: auto, extern, register and static storage class, their scope, storage, & lifetime. Algorithm development, Flowcharting and Development of efficient program in C.

GOVERNMENT COLLEGE BAHADURGARH

LESSON PLAN FOR SESSION 2021-22

Subject Name with code and semester:- BCA-107: LOGICAL ORGANIZATION OF COMPUTER-II, Semester: 2nd

Teacher Name:- Mr. Pradeep Kumar

MONTH	TOPIC
MARCH	Sequential Logic: Characteristics, Flip-Flops, Clocked RS, D type, JK, T type and Master-Slave flip-flops.
APRIL	State table, state diagram and state equations. Flip-flop excitation tables, Sequential Circuits: Designing registers – Serial Input Serial Output (SISO), Serial Input Parallel Output (SIPO), Parallel Input Serial Output (PISO), Parallel Input Parallel Output (PIPO) and shift registers. Designing counters – Asynchronous and Synchronous Binary Counters, Modulo-N Counters and Up-Down Counters.
MAY	Memory & I/O Devices: Memory Parameters, Semiconductor RAM, ROM, Magnetic and Optical Storage devices, Flash memory, I/O Devices and their controllers.
JUNE	Instruction Design & I/O Organization: Machine instruction, Instruction set selection, Instruction cycle, Instruction Format and Addressing Modes. I/O Interface, Interrupt structure, Program-controlled, Interrupt-controlled & DMA transfer, I/O Channels, IOP.

GOVERNMENT COLLEGE BAHADURGARH

LESSON PLAN FOR SESSION 2021-22

Subject Name with code and semester:- BCA-109 : Structured Systems Analysis and Design, Semester: 2nd

Teacher Name:- Ms. Minakshi Kalra

MONTH	TOPIC
MARCH	Introduction to system, Definition and characteristics of a system, Elements of system, Types of system, System development life cycle, Role of system analyst, Analyst/user interface, System planning
APRIL	initial investigation: Introduction, Bases for planning in system analysis, Sources of project requests, Initial investigation, Fact finding, Information gathering, information gathering tools, Fact analysis, Determination of feasibility. Structured analysis, Tools of structured analysis: DFD, Data dictionary, Flow charts, Gantt charts, decision tree, decision table, structured English, Pros and cons of each tool, Feasibility study: Introduction, Objective, Types, Steps in feasibility analysis, Feasibility report, Oral presentation, Cost and benefit analysis: Identification of costs and benefits, classification of costs and benefits, Methods of determining costs and benefits, Interpret results of analysis and take final action.
MAY	System Design: System design objective, Logical and physical design, Design Methodologies, structured design, Form-Driven methodology(IPO charts), structured walkthrough, Input/Output and form design: Input design, Objectives of input design, Output design, Objectives of output design, Form design, Classification of forms, requirements of form design, Types of forms, Layout considerations, Form control.
JUNE	System testing: Introduction, Objectives of testing, Test plan, testing techniques/Types of system tests, Quality assurance goals in system life cycle, System implementation, Process of implementation, System evaluation, System maintenance and its types, System documentation, Forms of documentation.

GOVERNMENT COLLEGE BAHADURGARH

LESSON PLAN FOR SESSION 2021-22

Subject Name with code and semester:- BCA – 206 : WEB DESIGNING, Semester: 4th

Teacher Name:- Ms. Minakshi Kalra

MONTH	TOPIC
MARCH	Introduction to Internet and World Wide Web, Evolution and History of World Wide Web, Basic features, Web Browsers, Web Servers, Hypertext Transfer Protocol, Overview of TCP/IP and its services,
APRIL	URLs, Searching and Web-Casting Techniques, Search Engines and Search Tools, Web Publishing: Hosting your Site, Internet Service Provider, Web terminologies, Phases of Planning and designing your Web Site, Steps for developing your Site, Choosing the contents, Home Page, Domain Names, Front page views, Adding pictures, Links, Backgrounds, Relating Front Page to DHTML. Creating a Website and the Markup Languages (HTML, DHTML).
MAY	Web Development: Introduction to HTML, Hypertext and HTML, HTML Document Features, HTML command Tags, Creating Links, Headers, Text styles, Text Structuring, Text colors and Background, Formatting text, Page layouts.
JUNE	Images, Ordered and Unordered lists, Inserting Graphics, Table Creation and Layouts, Frame Creation and Layouts, Working with Forms and Menus, Working with Radio Buttons, Check Boxes, Text Boxes, DHTML: Dynamic HTML, Features of DHTML,CSSP(cascading style sheet positioning) and JSSS(JavaScript assisted style sheet), Layers of netscape, The ID attributes, DHTML events.

GOVERNMENT COLLEGE BAHADURGARH

LESSON PLAN FOR SESSION 2021-22

Subject Name with code and semester:- BCA – 207: DATA STRUCTURE – II, Semester: 4th

Teacher Name:- Mr. Kamal Kumar Ranga

MONTH	TOPIC
MARCH	Tree: Header nodes, Threads, Binary search trees, Searching, Insertion and deletion in a Binary search tree, AVL search trees, Insertion and deletion in AVL search tree, m-way search tree, Searching
APRIL	Insertion and deletion in an m-way search tree, B-trees, Searching, Insertion and deletion in a B-tree, B+tree, Huffman's algorithm, General trees, Graphs: Warshall's algorithm for shortest path, Dijkstra algorithm for shortest path, Operations on graphs, Traversal of graph, Topological sorting.
MAY	Sorting: Internal & external sorting, Radix sort, Quick sort, Heap sort, Merge sort, Tournament sort, Searching: Liner search, binary search, merging, Comparison of various sorting and searching algorithms on the basis of their complexity.
JUNE	Files: Physical storage devices and their characteristics, Attributes of a file viz fields, records, Fixed and variable length records, Primiry and secondary keys, Classification of files, File operations, Comparison of various types of files, File organization: Serial, Sequential, Indexed-sequential, Random-access/Direct, Inverted, Multilist file organization. Hashing: Introduction, Hashing functions and Collision resolution methods .

GOVERNMENT COLLEGE BAHADURGARH

LESSON PLAN FOR SESSION 2021-22

Subject Name with code and semester:- BCA-208: Object Oriented Programming Using C++, Semester: 4th

Teacher Name:- Ms. Minakshi Kalra

MONTH	TOPIC
MARCH	Object Oriented Programming Concepts : Procedural Language and Object Oriented approach, Characteristics of OOP, user defined types, polymorphism and encapsulation. Getting started with C++: syntax, data types.
APRIL	variables, string, function, namespace and exception, operators, flow control, recursion, array and pointer, structure, Abstracting Mechanism: classes, private and public, Constructor and Destructor , member function, static members, references; Memory Management: new, delete, object copying, copy constructer, assignment operator, this input/output.
MAY	Inheritance and Polymorphism: Derived Class and Base Class, Different types of Inheritance, Overriding member function, Abstract Class, Public and Private Inheritance, Ambiguity in Multiple inheritance , Virtual function, Friend function, Static function.
JUNE	Exception Handling: Exception and derived class, function exception declaration, unexpected exception, exception when handling exception, resource capture and release. Template and Standard Template Library: Template classes, declaration, template functions, namespace, string, iterators, hashes, iostreams and other types.

GOVERNMENT COLLEGE BAHADURGARH

LESSON PLAN FOR SESSION 2021-22

Subject Name with code and semester:- BCA-209 : Software Engineering, Semester: 4th

Teacher Name:- Ms. Pradeep Kumar

MONTH	TOPIC
MARCH	Introduction: Software Crisis, Software Processes & Characteristics, Software life cycle models, Waterfall, Prototype, Evolutionary and Spiral Models. Software Requirements Analysis & Specifications: Requirement engineering, requirement elicitation techniques like FAST, QFD, requirements analysis using DFD.
APRIL	Data dictionaries & ER Diagrams, Requirements documentation, Nature of SRS, Characteristics & organization of SRS, Software Project Management Concepts: The Management spectrum, The People The Problem, The Process, The Project. Software Project Planning: Size Estimation like lines of Code & Function Count, Cost Estimation Models, COCOMO, Risk Management.
MAY	Software Design: Cohesion & Coupling, Classification of Cohesiveness & Coupling, Function Oriented Design, Object Oriented Design, Software Metrics: Software measurements: What & Why, Token Count, Halstead Software Science Measures, Design Metrics, Data Structure Metrics Software Implementation: Relationship between design and implementation, Implementation issues and programming support environment, Coding the procedural design, Good coding style.
JUNE	Software Testing: Testing Process, Design of Test Cases, Types of Testing, Functional Testing, Structural Testing, Test Activities, Unit Testing, Integration Testing and System Testing, Debugging Activities. Software Maintenance: Management of Maintenance, Maintenance Process, Reverse Engineering, Software Re-engineering, Configuration Management, Documentation.

GOVERNMENT COLLEGE BAHADURGARH

LESSON PLAN FOR SESSION 2021-22

Subject Name with code and semester:- BCA – 306: E-Commerce, Semester: 6th

Teacher Name:- Mr. Kamal Kumar Ranga

MONTH	TOPIC
MARCH	Electronic Commerce: Overview of Electronic Commerce, Scope of Electronic Commerce, Traditional Commerce vs. Electronic Commerce, Impact of E-Commerce, Electronic Markets, Internet Commerce, e-commerce in perspective.
APRIL	Application of E Commerce in Direct Marketing and Selling, Obstacles in adopting E-Commerce Applications; Future of Ecommerce, Value Chains in electronic Commerce, Supply chain, Porter's value chain Model, Inter Organizational value chains, Strategic Business unit chains, Industry value chains. Security Threats to E-commerce: Security Overview, Computer Security Classification, Copyright and Intellectual Property, security Policy and Integrated Security, Intellectual Property Threats, electronic Commerce Threats, Clients Threats, Communication Channel Threats, server Threats.
MAY	Implementing security for E-Commerce: Protecting E-Commerce Assets, Protecting Intellectual Property, Protecting Client Computers, Protecting E-commerce Channels, Insuring Transaction Integrity, Protecting the Commerce Server. Electronic Payment System: Electronic Cash, Electronic Wallets, Smart Card, Credit and Change Card.
JUNE	Business to Business E-Commerce: Inter-organizational Transitions, Credit Transaction Trade Cycle, a variety of transactions. Electronic Data Interchange (EDI): Introduction to EDI, Benefits of EDI, EDI Technology, EDI standards, EDI Communication, EDI Implementation, EDI agreement, EDI security.

GOVERNMENT COLLEGE BAHADURGARH

LESSON PLAN FOR SESSION 2021-22

Subject Name with code and semester:- BCA-307 : Object Technologies & Programming using Java, Semester: 6th

Teacher Name:- Mr. Kamal Kumar Ranga

MONTH	TOPIC
MARCH	Object Oriented Methodology-1: Paradigms of Programming Languages, Evolution of OO Methodology, Basic Concepts of OO Approach, Comparison of Object Oriented and Procedure Oriented Approaches, Benefits of OOPs, Introduction to Common OO Language, Applications of OOPs .
APRIL	Object Oriented Methodology-2: Classes and Objects, Abstraction and Encapsulation, Inheritance, Method Overriding and Polymorphism, Java Language Basics: Introduction To Java, Basic Features, Java Virtual Machine Concepts, Primitive Data Type And Variables, Java Operators, Expressions, Statements and Arrays. Object Oriented Concepts: Class and Objects-- Class Fundamentals, Creating objects , Assigning object reference variables; Introducing Methods, Static methods, Constructors , Overloading constructors; This Keyword; Using Objects as Parameters, Argument passing, Returning objects , Method overloading, Garbage Collection, The Finalize ( ) Method. Inheritance and Polymorphism: Inheritance Basics, Access Control, Multilevel Inheritance, Method Overriding, Abstract Classes, Polymorphism, Final Keyword.
MAY	Packages : Defining Package, CLASSPATH, Package naming, Accessibility of Packages , using Package Members. Interfaces: Implementing Interfaces, Interface and Abstract Classes, Extends and Implements together . Exceptions Handling : Exception , Handling of Exception, Using try-catch , Catching Multiple Exceptions , Using finally clause , Types of Exceptions, Throwing Exceptions, Writing Exception Subclasses.
JUNE	Multithreading : Introduction , The Main Thread, Java Thread Model, Thread Priorities, Synchronization in Java, Inter thread Communication. I/O in Java : I/O Basics, Streams and Stream Classes ,The Predefined Streams, Reading from, and Writing to, Console, Reading and Writing Files , The Transient and Volatile Modifiers , Using Instance of Native Methods. Strings and Characters : Fundamentals of Characters and Strings, The String Class , String Operations , Data Conversion using Value Of ( ) Methods , String Buffer Class and Methods.

GOVERNMENT COLLEGE BAHADURGARH

LESSON PLAN FOR SESSION 2021-22

Subject Name with code and semester:- BCA-308 : Artificial Intelligence, Semester: 6th

Teacher Name:- Ms. Minakshi Kalra

MONTH	TOPIC
MARCH	Overview of A.I: Introduction to AI, Importance of AI, AI and its related field, AI techniques, Criteria for success. Problems, problem space and search: Defining the problem as a state space search, Production system and its characteristics, Issues in the design of the search problem
APRIL	Heuristic search techniques : Generate and test, hill climbing, best first search technique, problem reduction, constraint satisfaction, Knowledge Representation: Definition and importance of knowledge, Knowledge representation, Various approaches used in knowledge representation, Issues in knowledge representation. Using Predicate Logic : Represent ting Simple Facts in logic, Representing instances and is_a relationship, Computable function and predicate.
MAY	Natural language processing : Introduction syntactic processing, Semantic processing, Discourse and pragmatic processing. Learning: Introduction learning, Rote learning, Learning by taking advice, Learning in problem solving, Learning from example-induction, Explanation based learning.
JUNE	Expert System: Introduction, Representing using domain specific knowledge, Expert system shells.

GOVERNMENT COLLEGE BAHADURGARH

LESSON PLAN FOR SESSION 2021-22

Subject Name with code and semester:- BCA – 309 : INTRODUCTION TO .NET, Semester: 4th

Teacher Name:- Mr. Kamal Kumar Ranga

MONTH	TOPIC
MARCH	The Framework of .Net: Building blocks of .Net Platform (the CLR, CTS and CLS), Features of .Net, Deploying the .Net Runtime, Architecture of .Net platform, Introduction to namespaces & type distinction.
APRIL	Types & Object in .Net, the evolution of Web development, Class Libraries in .Net, Introduction to Assemblies & Manifest in .Net, Metadata & attributes . Introduction to C#: Characteristics of C#, Data types: Value types, reference types, default value, constants, variables, scope of variables, boxing and unboxing.
MAY	Operators and expressions: Arithmetic, relational, logical, bitwise, special operators, evolution of expressions, operator precedence & associativity, Control constructs in C#: Decision making, loops, Classes & methods: Class, methods, constructors, destructors, overloading of operators & functions. U
JUNE	Inheritance & polymorphism: visibility control, overriding, abstract class & methods, sealed classes & methods, interfaces. Advanced features of C#: Exception handling & error handling, automatic memory management, Input and output (Directories, Files, and streams).