K.M.Govt. College ,Narwana, Jind

Week Wise Lesson Plan 2023-24(Odd Semester) Computer Science (Offline mode)

Name:Dr. Poonam (Extension Lecturer) Subject:D.S (Bsc3rd Sem) Code(CCS03(1)-i)

	August
Week 3	Introduction: Elementary data organization, Data Structure definition,
Week 4	Data type vs. data structure, Categories of data structures
Week 5	Data structure operations, Applications of data structures,
	September
Week 1	Algorithms complexity and time-space trade off, Big-O notation.
Week 2	Strings: Introduction, strings, String operations, Pattern matching algorithms
Week 3	Representation of linear array in memory, Traversal,
Week 4	Insertions, Deletion in an array, Multidimensional arrays,
	October
Week 1	Parallel arrays,Sparsematrix. Linked List:
Week 2	Introduction, Array vs. linked list, Representationof linked lists in memory,
Week 3	Traversal ,Insertion,Deletion,Searching ina linked list .
Week 4	Headerlinked list,Circularlinked list,
Week 5	Two-way linked list,Garbage collection, Applicationsof linkedlists. Algorithmof insertion/deletion inSLL
	November
Week 1	Stack: primitive operation on stack, algorithms for push and pop.
Week 2	Representation of Stack as Linked List and array, Stacks applications: polish notation, recursion.
Week 3	Introduction to queues, Primitive Operations on the Queues, Circular queue, Priority queue, Representation of Queues as Linked List and array,
Week 4	Applications of queue. Algorithm on insertion and deletion in simple queue and circular queue.
	December
Week 1	Trees-Basic Terminology, representation, Binary Trees, Tree Representations using Array &Linked List, Basic operation on Binary tree,
Week 2	Traversal of binary trees:-Inorder, Preorder & post order, Applications of Binary tree. Algorithm of tree traversal with and without recursion.
Week 3	Introduction to graphs, Definition, Terminology, Directed, Undirected &Weighted graph, Representation of graphs.

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Week Wise Lesson Plan 2023-24(Odd Semester) Computer Science (Offline mode)(NEP-2020)

Dr. Poonam (Extension Lecturer)   L.O.C (Bsc1stSem)(Physical Science) code-B23-CC-C1

	August
Week 3	Number Systems: Binary, Octal, Hexadecimal etc. Conversions from one number system to another, BCD Number
Week 4	System. BCD Codes: Natural Binary Code, Weighted Code, Self-Complimenting Code, Cyclic Code.
Week 5	Error Detecting and Correcting Codes. Character representations: ASCII, EBCDIC and Unicode.
	September
Week 1	Number Representations: Integer numbers - sign-magnitude, 1's & 2's complement representation. Real Numbers normalized floating point representations
Week 2	Binary Arithmetic: Binary Addition, Binary Subtraction, Binary Multiplication, Binary Division using 1's and 2's Compliment representations, Addition and subtraction with BCD representations.
Week 3	Boolean Algebra: Boolean Algebra Postulates, basic Boolean Theorems, Boolean Expressions, Boolean Functions, Truth Tables, Canonical Representation of Boolean Expressions: SOP and POS,
Week 4	Simplification of Boolean Expressions using Boolean Postulates & Theorems, Kaurnaugh-Maps (upto four variables), Handling Don't Care conditions.Class Test
	October
Week 1	Logic Gates: Basic Logic Gates – AND, OR, NOT, Universal Gates – NAND, NOR, Other Gates – XOR, XNOR etc. Their symbols, truth tables and Boolean expressions.
Week 2	Combinational Circuits: Design Procedures, Half Adder, Full Adder, Half Subtractor, Full Subtracor,
Week 3	Multiplexers, Demultiplexers, Decoder, Encoder, Comparators, Code Converters
Week 4	Sequential Circuits: Basic Flip- Flops and their working. Synchronous and Asynchronous Flip –Flops,
Week 5	Triggering of Flip-Flops, Clocked RS, , Assignment
	November
Week 1	D Type, JK, T type and Master-Slave Flip-Flops.
Week 2	Mid Terms Exam
Week 3	State Table, State Diagram and State Equations.
Week 4	Flip-flops characteristics & Excitation Tables. Class Test
	December
Week 1	. Sequential Circuits: Designing registers –Serial-In Serial-Out (SISO), Serial-In Parallel-Out (SIPO), Parallel-In Serial-Out (PISO)
Week 2	Parallel-In Parallel-Out (PIPO) and shift registers
Week 3	Winter vocations ,Exam

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Week Wise Lesson Plan 2023-24(Odd Semester) Computer Science (Offline mode)(NEP-2020)

Dr. Poonam (Extension Lecturer) Dis. Strut.in comp (Bca1stSem)(Minor) Code-BCA23-M101

	August
Week 3	An introduction to matrices and their types, Operations on matrices,
Week 4	Symmetric and skew-symmetric matrices, Minors, Co-factorsr.
Week 5	Determinant of a square matrix, Adjoint and inverse of a square matrix, Solutions of a system of linear equations up to order 3.
	September
Week 1	Introduction to counting: Basic counting techniques – inclusion and exclusion, pigeon-hole principle,
Week 2	Permutation, combination, summations. Introduction to recurrence relation and generating function.
Week 3	Introduction to recurrence relation and generating function.
Week 4	Class Test
	October
Week 1	Introduction to Probability, Random Experiment, Random Variable, Random Example,
Week 2	Expected Value, Independent Variables, Dependent Variable,
Week 3	Bayes Theorem, Mutually Exclusive events, Complementary Events,
Week 4	Geometrical Probability, Probability with or without replacement. Probability Distribution: Binomial Distribution,
Week 5	Class Test and Assignment
	November
Week 1	Poisson's Distribution, Geometric Distribution
Week 2	Deepawali holidays, Mid Term Exam
Week 3	Introduction to Statistics: Central Tendency, Mean, Mode,
Week 4	Median, Dispersion
	December
Week 1	Data Types and Data presentation: Data types: Attributes, Variable, Discrete and Continuous variable, Univariate and Bivariate distribution,
Week 2	Types of Characteristics, Different types of Scales: normal, ordinal, interval, and ratio. Data presentation: Frequency distribution, Histogram, Ogive curves.
Week 3	Winter vocations ,Exam

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