Department of Computer Science

Name of Teacher: Dinesh **Lesson Plan Session 2024-2025**

BACS Semester-I

Fundamentals of Computer and Programming in C (C24COS101T)

Month	Week	Topics
July	Week-4	Basics of Computers: Definition of a Computer - Characteristics and Applications of Computers
August	Week-1	Block Diagram of a Digital Computer – Classification of Computers based on size and working – Central Processing Unit – I/O Devices.
	Week-2	Storage: Primary, Auxiliary and Cache Memory – Memory Devices. Software,
	Week-3	Hardware, Firmware. Operating System – Definition and Functions of an Operating System – MS-DOS – MS Windows – Desktop,
	Week-4	Computer, Documents, Pictures, Music, Videos, Recycle Bin, Task Bar – Control Panel.
September	Week-1	C Programming Fundamentals
	Week-2	Keywords, Variables and Constants, Structure of a C Program, Input/Output.
	Week-3	Operators & Expressions: Arithmetic, Unary, Logical. Bit-wise, Assignment & Conditional Operators
	Week-4	Decision Making: Decision making using if...else. Else If Ladder;
Oct	Week-1	Switch, break. Continue and Goto statements.
	Week-2	Loop Control Structure: While and do-while, for loop and Nested for loop, Decision using switch; goto, break and continue statements.
	Week-3	Functions: Introduction, using functions – Function declaration/ prototype – Function definition
	Week-4	function call – return statement – Passing parameters , Recursive functions
Nov	Week-1	Arrays: Introduction, Declaration of Arrays , Accessing elements of the Array – Storing Values in Array
	Week-2	Passing array element to a function: Call by Value and Call by Reference,
	Week-3	One dimensional array -declaration, initialization, Accessing one dimensional array**,** , Two dimensional Arrays-declaration, initialization, Accessing two dimensional arrays.
	Week-4	Doubt Clearance
End Semester Examinations (Major Test) from 23.11.2024		

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BACS Semester-III

Operating System (BACS-212)

Month	Week	Topics
July	Week-4	Structure of Operating Systems: Layers-MS-DOS LayerStructure, Traditional UNIX System Structure;
August	Week-1	Running Multiple Operating Systems, Running a VirtualOperating System,
	Week-2	Operating System Modes, and System Boot.
	Week-3	Process Management: Introduction to Process,
	Week-4	Attributes of aprocess, Process States, Operations on the Process, Process Schedulers
Sept	Week-1	CPU Scheduling, Scheduling Algorithms,
	Week-2	Purpose of aScheduling algorithms
	Week-3	Introduction to FCFS, Shortest Job First (SJF), Round RobinScheduling Algorithms.
	Week-4	Memory Management: Fixed and Dynamic partition,
Oct	Week-1	Physical and Logical Address Space
	Week-2	Page Table, Mapping from page table to main memory, Page Table Entry, Size of the page table, Finding OptimalPage Size.
	Week-3	Virtual Memory Concepts, Advantages and disadvantage ofVirtual Memory
	Week-4	Segmentation, Translation of Logical address into physical address by segment table
Nov	Week-1	Advantages and disadvantage of Segmentation. Paging VS Segmentation.
	Week-2	File Management: Attributes of File, Operations on File, File Access Methods-Sequential, Direct and Indexed Access;Directory Structure
	Week-3	File Systems, File System Structure- different layers; MasterBoot Record, Directory Implementation-Linear List and Hash Table; Diskspace Allocation Methods- Contiguous Allocation and FAT
	Week-4	Doubt Clearance
End Semester Examinations (Major Test) from 23.11.2024		

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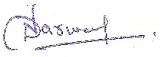
BACS Semester-III

Data Base Management System (BACS-211)

Month	Week	Topics
July	Week-4	Basic Concepts: A Historical perspective, File Systemsvs. DBMS, Characteristics of the Data Base Approach,
August	Week-1	Abstraction and Data Integration, Database users,
	Week-2	Advantagesand Disadvantages of DBMS, DBMS architecture,
	Week-3	Data Models, Schemas and Instances, DataIndependence
	Week-4	Entity Relationship (ER) Model: Basic Concepts-Entity,
September	Week-1	Entity set and Keys; Relationships-Relationship set,
	Week-2	Degree of Relationship, Mapping Cardinalities.
	Week-3	ER diagram representation-Representation of Entity, Attributesand Relationship
	Week-4	Binary Representationand Cardinality,
Sept	Week-1	ParticipationConstraints. Relational Model: Relational model concepts (Tables, Tuple, Relation instance, Relation schema, Relation key, Attributedomain),
	Week-2	Constraints- Key constraints, Domain constraints, Referentialintegrity constraints;
	Week-3	Attributes, Types of Attributes
	Week-4	Relational algebra, Basic operations: Select, Project, Union, setdifference, Cartesian product, Rename.
October	Week-1	Relational Database design: Mapping ER model to relationaldatabase
	Week-2	Functional dependencies, Lossless decomposition
	Week-3	Desirableproperties of decomposition,
	Week-4	Normal forms (1 NF, 2 NF, 3 NF and BCNF)
November	Week-1	SQL introduction
	Week-2	SQL: Why SQL, Data Types; DDL-Create, Alter and Drop table Commands.
	Week-3	DML-SELECT/ FROM/ WHERE, INSERT INTO/ VALUES,UPDATE /SET/ WHERE, DELETE Commands, UNION [ALL], INTERSECTION and MINUS Operators.
	Week-4	Doubts Clearance
End Semester Examinations (Major Test) from 23.11.2024		



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BACS Semester-V

Object Oriented Programming Using C++ (BACS-311)

Month	Week	Topics
July	Week-4	Procedure Oriented Programming, Object-Oriented programming Paradigm, difference between Procedure Oriented Programming and Object-Oriented programming,
August	Week-1	Basic concepts of Object-Oriented programming, Benefits ofOOP, Object Oriented Languages, and application of OOP,
	Week-2	Structure of a C++ Program, Insertion operator,
	Week-3	Extractionoperator, Hierarchy of Console Stream Classes
	Week-4	Unformatted and Formatted I/O Operations, Manipulators,inline functions.
Sept	Week-1	C structure revisited, specifying a Class, Creating Objects,Defining member function
	Week-2	Memory allocation for objects, Scope resolution operator andits significance
	Week-3	Static Data Members, Static member functions
	Week-4	Friend Function, Friend Class
October	Week-1	Dynamic Memory Management using new and delete Operator,
	Week-2	Constructor, type of constructors, Dynamic initialization ofobjects
	Week-3	Constructor overloading, Constructor with defaultarguments, Destructors,
	Week-4	Function overloading
November	Week-1	Operator Overloading, Overloading unary and binary operators.
	Week-2	Inheritance, Single Inheritance, Making a private memberinheritable, Multilevel Inheritance, Multiple Inheritance, Hierarchical Inheritance, HybridInheritance
	Week-3	Virtual Base Class. Abstract Classes, Constructors inderived classes.
	Week-4	Doubt Clearance
End Semester Examinations (Major Test) from 23.11.2024		

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BACS Semester-V

Data Analytics (BACS-312)

Month	Week	Topics
July	Week-4	Data Analytics: Introduction to Data Analytics, Business Intelligence (BI) for better decisions, Decision types, BI tools, BI skills, BI applications.
August	Week-1	Data warehousing: Introduction to Data warehousing (DW), Design considerations for DW, DW development approaches, DW architecture
	Week-2	Data Mining: Introduction to Data mining, Data cleaning and preparation, outputs of Data mining, evaluation of data mining results, Data Mining Techniques
	Week-3	Decision Trees: Introduction to Decision tree, Decision tree problem, Decision tree construction,
	Week-4	Lessons from constructing trees, Decisiontree algorithms
Sept	Week-1	Regression: Introduction, Correlations and Relationships, Visual Look at Relationships,
	Week-2	Logistic regression, Advantages and disadvantages of regression models.
	Week-3	Artificial Neural Networks: Introduction, business applications of ANN, Design principles of an ANN,
	Week-4	Representation of a neuralnetwork, Architecting a neural network, Developing an ANN, Advantages and disadvantages of using ANN.
October	Week-1	Cluster analysis: Introduction, Applications of cluster analysis, Definition of a cluster, Representing clusters,
	Week-2	Clustering techniques, K-means algorithm for clustering, Selecting the number of clusters.
	Week-3	Association rule Mining: Introduction, Business applications of association rules, Representing association rules, Algorithms for association rule, Apriori algorithm, Creating association rules
	Week-4	Web Mining: Introduction, Web content mining, Web structure mining, Web usage mining, Web mining algorithms
November	Week-1	Naive-base analysis: Introduction, Probability, Naïve base model, Text classification example. Support vector machines: Introduction, SVM model, The kernel method
	Week-2	Big data: Introduction, Defining big data, Big data landscape, Business implications of big data,
	Week-3	Technology implications of big data, Big data technologies, Management of big data.
	Week-4	Doubt Clearance
End Semester Examinations (Major Test) from 23.11.2024		

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