

Department of Computer Science

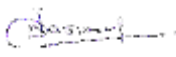
Name of Teacher: Dinesh

Lesson Plan Session 2025-26

BACS Semester-I

Fundamentals of Computer and Programming in C (C24COS301T)

| 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 | Diwali Holidays |
| | Week -5 | 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) in Last Week of November | | |


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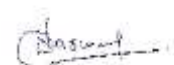
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Lesson Plan Session 2025-26

BACS Semester-III

Data Base Management System

| Month | Week | Topics |
|--|--------|---|
| July | Week-4 | Basic Concepts: A Historical perspective, File Systems vs. DBMS, Characteristics of the Data Base Approach, |
| August | Week-1 | Abstraction and Data Integration, Database users, |
| | Week-2 | Advantages and Disadvantages of DBMS, DBMS architecture, |
| | Week-3 | Data Models, Schemas and Instances, Data Independence |
| | 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, Attributes and Relationship |
| | Week-4 | Binary Representation and Cardinality, |
| Sept | Week-1 | Participation Constraints. Relational Model: Relational model concepts (Tables, Tuple, Relation instance, Relation schema, Relation key, Attribute domain), |
| | Week-2 | Constraints- Key constraints, Domain constraints, Referential integrity constraints; |
| | Week-3 | Attributes, Types of Attributes |
| | Week-4 | Relational algebra, Basic operations: Select, Project, Union, set difference, Cartesian product, Rename. |
| October | Week-1 | Relational Database design: Mapping ER model to relational database |
| | Week-2 | Functional dependencies, Lossless decomposition |
| | Week-3 | Desirable properties of decomposition, |
| | Week-4 | Diwali Holidays |
| | Week-5 | 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) in Last week of November | | |



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Lesson Plan Session 2025-26

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 of OOP, Object Oriented Languages, and application of OOP, |
| | Week-2 | Structure of a C++ Program, Insertion operator, |
| | Week-3 | Extraction operator, 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 and its 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 of objects |
| | Week-3 | Constructor overloading, Constructor with default arguments, Destructors, |
| | Week-4 | Diwali Holidays |
| | Week-5 | Function overloading |
| November | Week-1 | Operator Overloading, Overloading unary and binary operators. |
| | Week-2 | Inheritance, Single Inheritance, Making a private member inheritable, Multilevel Inheritance, Multiple Inheritance, Hierarchical Inheritance, Hybrid Inheritance |
| | Week-3 | Virtual Base Class. Abstract Classes, Constructors in derived classes. |
| | Week-4 | Doubt Clearance |
| End Semester Examinations in Last Week of November 2025 | | |

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Lesson Plan Session 2025-26

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 | Diwali Holidays |
| | Week-5 | 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 in Last Week of November 2025 | | |

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