Department of Computer Science
Lesson Plan Session 2025-2026
BACS Semester-V

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

July 2025 to November 2025	Topics
1st Week	Procedure Oriented Programming, Object-Oriented programming Paradigm, difference between Procedure Oriented Programming and Object-Oriented programming,
2nd week	Basic concepts of Object-Oriented programming, Benefits of OOP, Object Oriented Languages, and application of OOP
3rd Week	Structure of a C++ Program, Insertion operator, Extraction operator, Hierarchy of Console Stream Classes
4th Week	Unformatted and Formatted I/O Operations, Manipulators, inline functions.
5th Week	C structure revisited, specifying a Class, Creating Objects, Defining member function
6th Week	Memory allocation for objects, Scope resolution operator and its significance
7th Week	Static Data Members, Static member functions
8th Week	Friend Function, Friend Class
9th Week	Dynamic Memory Management using new and delete Operator,
10th Week	Constructor, type of constructors, Dynamic initialization of objects
11th Week	Constructor overloading, Constructor with default arguments, Destructors,
12th Week	Function overloading
13th Week	Operator Overloading, Overloading unary and binary operators.
14th Week	Inheritance, Single Inheritance, Making a private member inheritable, Multilevel Inheritance
15th Week	Multiple Inheritance, Hierarchical Inheritance, Hybrid Inheritance
16th Week	Virtual Base Class. Abstract Classes, Constructors in derived classes.
17th Week	Doubt Clearance

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Data Analytics (BACS-312)

July 2025 to November 2025	Topics
1st Week	Data Analytics: Introduction to Data Analytics, Business Intelligence (BI) for better decisions, Decision types, BI tools, BI skills, BI applications.
2nd week	Data warehousing: Introduction to Data warehousing (DW), Design considerations for DW, DW development approaches, DW architecture
3rd Week	Data Mining: Introduction to Data mining, Data cleaning and preparation, outputs of Data mining, evaluation of data mining results, Data Mining Techniques
4th Week	Decision Trees: Introduction to Decision tree, Decision tree problem, Decision tree construction, Lessons from constructing trees, Decision tree algorithms
5th Week	Regression: Introduction, Correlations and Relationships, Visual Look at Relationships, Logistic regression, Advantages and disadvantages of regression models.
6th Week	Artificial Neural Networks: Introduction, business applications of ANN, Design principles of an ANN, Representation of a neural network, Architecting a neural network,
7th Week	Developing an ANN, Advantages and disadvantages of using ANN.
8th Week	Cluster analysis: Introduction, Applications of cluster analysis, Definition of a cluster, Representing clusters
9th Week	Clustering techniques, K-means algorithm for clustering, Selecting the number of clusters.
10th Week	Association rule Mining: Introduction, Business applications of association rules, representing association rules, Algorithms for association rule, Apriori algorithm, Creating association rules
11th Week	Web Mining: Introduction, Web content mining, Web structure mining, Web usage mining, Web mining algorithms
12th Week	Naive-base analysis: Introduction, Probability, Naïve base model, Text classification example.
13th Week	Support vector machines: Introduction, SVM model, The kernel method
14th Week	Big data: Introduction, Defining big data, Big data landscape, Business implications of big data,
15th Week	Technology implications of big data, Big data technologies
16th Week	Management of big data.
17th Week	Doubt Clearance