

Lesson Plan

Name of Faculty: **Deepa Nehra**

Discipline: **MCA**

Semester: **2nd semester**

Subject: Object Oriented Programming using C++ (MCA-14-22)

Lesson Plan Duration: **15 Weeks**

Workload Per Week: **4 Lecture, 3 Practicals Per Week**

Week	Theory		Practical	
	Lecture Day	Topic(including assignment Test)	Practical Day	Topic
1 st	1 st	Object-Oriented features of C++,	1 st	Program to use cin, cout in C++.
	2 nd	Comparison of C with C++	2 nd	Practical assignment on use of scope resolution operator in C++.
	3 rd	Class and Objects	3 rd	WAP to create a class and object to maintain the record of a student and to display its result.
	4 th	Inline functions, Static data members and member functions		
2 nd	5 th	Read-Only objects, Pointers	4 th	WAP to demonstrate the use of inline functions. WAP to count the number of live objects in a program using static data member and member function.
	6 th	Dynamic memory allocation and deallocation	5 th	WAP to demonstrate the use of a pointer to object and creation of read only objects
	7 th	Constructors & Destructors	6 th	WAP to demonstrate dynamic memory allocation & Deallocation.
	8 th	Dynamic objects		

3rd	9 th	Doubt Session / Assignment	7 th	WAP to initialize the objects using constructors and destructors WAP to demonstrate different types of constructors.
	10 th	array of pointers to object, local and global class	8 th	WAP to create dynamic objects using new and delete operators & constructors and destructors.
	11 th	nested and empty class	9 th	WAP to create array of objects for maintaining students record for 10 students.
	12 th	Preprocessor directives, Header files and namespaces		
4th	13 th	Console I/O: Hierarchy of console stream classes, Unformatted I/O	10 th	WAP to create local and global class. WAP to demonstrate the functioning of nested classes.
	14 th	formatted I/O operations, Manipulators.	11 th	Write an interactive program to create a complex class and different functions to perform addition, subtraction, multiplication & division among constructor class objects.
	15 th	MCQ	12 th	WAP to demonstrate the use of manipulators.
	16 th	Class Test		
5 th	17 th	Operator Overloading-	13 th	WAP to demonstrate the use of ios flags for formatted output.
	18 th	overloading unary and binary arithmetic	14 th	WAP to implement the Banking application.
	19 th	overloading unary and binary arithmetic and relational operators	15 th	WAP to implement the library issue and return module.
	20 th	new and delete operators		
6 th	21 st	Function Overloading	16 th	WAP to overload the binary arithmetic operators for complex class.
	22 nd	overloading operators by friend function	17 th	WAP to overload unary arithmetic operators.

	23 rd	overloading subscript, insertion, extraction	18 th	WAP to overload relational operators for comparison of strings.
	24 th	Doubt Session		
7 th	25 th	Basic type conversion	19 th	WAP to overload increment and decrement operator.
	26 th	conversion between Objects and Basic Types	20 th	WAP to overload new and delete operators.
	27 th	Conversion between objects of different classes.	21 st	WAP to overload insertion and extraction operator using friend function.
	28 th	Class test		
8 th	29 th	Inheritance: Base and Derived Classes, Protected Members,	22 nd	WAP to overload subscript operator.
	30 th	Casting Base-Class Pointers to Derived- Class Pointers, Using Member Functions	23 rd	WAP to demonstrate the conversion between objects and basic types
	31 st	Overriding Base-Class Members in a Derived Class, Public, Protected and Private Inheritance,	24 th	WAP to demonstrate the conversion between objects of different classes.
	32 nd	Using Constructors and Destructors in derived Classes,		
9 th	33 rd	Doubt Session/ Assignment	25 th	WAP to demonstrate the different types of inheritance.
	34 th	Implicit Derived-Class Object To Base-Class Object Conversion, Composition Vs. Inheritance.	26 th	WAP to describe the concept to multipath inheritance.
	35 th	Virtual functions and their needs	27 th	WAP to create base class pointer and call the derived class members using base class pointer.
	36 th	Pure virtual function, virtual destructor,		
10 th	37 th	virtual derivation, abstract class	28 th	WAP to demonstrate public , private and protected Inheritance.
	38 th	Generic Programming	29 th	WAP to describe the need and use of virtual functions to implement run time overloading.
	39 th	Function Templates	30 th	WAP for Pure virtual function and virtual destructor.
	40 th	Overloading Template Functions		
11 th	41 st	Class Templates and Non-Type Parameters	31 st	WAP to define function templates.
	42 nd	MCQ	32 nd	WAP to describe the concept of class templates.

	43 rd	Exception Handling: Try, Throw, Catch	33 rd	Practice Session
	44 th	Throwing an Exception, Catching an Exception, Re-throwing an Exception.		Practice Session
12 th	45 th	Class Test	34 th	WAP to demonstrate the concept of exception handling
	46 th	Opening and Closing files	35 th	WAP to re-throw an except and catch all exceptions.
	47 th	File modes	36 th	Practice Session
	48 th	File pointers and their manipulations		
13 th	49 th	ASCII Files	37 th	WAP to demonstrate the opening and closing a file using open and close function.
	50 th	Binary Files	38 th	WAP to define different file opening modes.
	51 st	Sequential Files	39 th	WAP to describe the use and manipulation of file pointers for accessing the contents of files.
	52 nd	Random access files		WAP for creation of ASCII files.
14 th	53 rd	Doubt Session/ Assignment	40 th	WAP to create and access Binary files.
	54 th	Class Test	41 st	WAP to create and access Sequential Files
	55 th	Presentations	42 nd	WAP to create and access Random Access files.
	56 th	Presentations		Minor Application to demonstrate the use of files in C++.
15 th	57 th	Revision of UNIT 1	43 rd	Practice Session
	58 th	Revision of UNIT 2	44 th	Practical Test
	59 th	Revision of UNIT 3	45 th	Viva Voce
	60 th	Revision of UNIT 4		Practice Session

Lesson Plan

Name of Faculty: **Rupali Rana**

Discipline: **MCA**

Semester: **2nd**

Subject: **PRINCIPLES OF PROGRAMMING LANGUAGES (MCA-14-23)**

Lesson Plan Duration: **15 Weeks**

Workload (Lecture) Per Week: **4 Lecture Per Week**

Week	Theory	
	Lecture Day	Topic(Including Assignment /Test)
1st	1 st	Preliminaries: History, Impact of Programming Paradigms
	2 nd	Role of Programming Languages, Good Language
	3 rd	Effects of Programming Environment, Translators and virtual architectures
	4 th	Binding and Binding time, Language Syntax
2nd	5 st	Analysis of Program, Synthesis of Object program
	6 th	Formal translation models: BNF Grammars
	7 th	General parsing, Language translation,
	8 th	Recursive descent parsing Assignment1: <ol style="list-style-type: none"> 1) What are the design issues of programming language? Define Orthogonality and Portability in the context of programming language design. 2) Differentiate between Control abstraction and Procedural Abstraction. 3) State and explain the features of a good programming language.

3rd	9 th	Revision of Unit-1
	10 th	Test of Unit-1
	11 th	MCQ's of Unit-1
	12 th	Formal languages and automata: The Chomsky hierarchy of formal languages
4th	13 th	Regular grammars, Regular Expressions
	14 th	Finite State Automata, Context-free grammars
	15 th	Pushdown automata, Ambiguous grammars
	16 th	Language Semantics: Attribute grammars, Denotational semantics
5th	17 th	Program verification and validation
	18 th	Data objects, variables, constants, data types
	19 th	declaration, type checking
	20 th	type casting
6th	21 st	type promotion
	22 nd	Enumerators
	23 rd	Composite data types
	24 th	Assignment 2: 1) Explain about context-free grammars with examples. 2) Differentiate between Context free grammar and context sensitive grammar. 3) What is the role of Determinism in Pushdown automata? Give two examples each of deterministic and non-deterministic pushdown automata accepted languages with their PDA.
7th	25 th	Revision of UNIT 2
	26 th	MCQ's of UNIT 2
	27 th	Test of Unit 2
	28 th	Object Orientated concepts: Structured data types
8th	29 th	Abstract data types, Information hiding, Subprogram concepts
	30 th	Good program design, Type definitions
	31 st	Type equivalence, Inheritance, Derived

		classes
	32 nd	Abstract classes, Polymorphism, Inheritance and software reuse
9th	33 th	Sequence control: Implicit and explicit sequence control
	34 th	Sequence control within arithmetic expressions
	35 th	sequence control between statements
	36 th	sequencing with non-arithmetic expressions
10th	37 th	Subprogram Sequence control
	38 th	Assignment 3: 1) Describe various implementation issues in Object- Oriented languages. 2) What is the “Dangling else” problem? How is it avoided in modern languages? 3) Differentiate between the following 1 (a) Inheritance and Polymorphism. (b) Object—oriented Programming and Procedural Programming.
	39 th	Revision of Unit 3
	40 th	Test of Unit 3
11th	41 st	MCQ’s Of Unit-3
	42 nd	Miscellaneous topics: Parameter passing techniques, Static & Dynamic Scoping
	43 rd	Storage of variables,Static storage
	44 th	Heap Storage management, Distributed Processing
12th	45 th	Exceptions and Exception handlers
	46 th	Coroutines, Scheduled subprograms
	47 th	Processor design
	48 th	Hardware and Software architectures
13th	49 th	Parallel programming
	50 th	Network Programming
	51 st	Evolution of scripting languages
	52 nd	Applets
	53 th	XML

14th	54 th	Assignment 4: 1) Explain the significance of functions in PROLOG. 2) Define property list in LISP. Explain it with its access procedures. 3) Explain the process of synchronization with the help of semaphores.
	55 th	Revision of Unit 4
	56 th	Test of Unit 4
15th	57 th	Revision of Unit 1
	58 th	Revision of Unit 2
	59 th	Revision of Unit 3
	60 th	Revision of Unit 4

Lesson Plan

Name of Faculty: **Tanvi Mehta**

Discipline: **MCA**

Semester: **2nd**

Subject: **Web Technologies (MCA-14-25)**

Lesson Plan Duration: **15 Weeks**

Workload (Lecture) Per Week: **4 Lecture Per Week**

<i>Week</i>	<i>Theory</i>		<i>Practical</i>	
	Lecture Day	Topic(including assignment Test)	Practical Day	Topic
1 st	1 st	Web Engineering introduction	1 st	Write a program in html to design a Resume.
	2 nd	Categories of Web Applications	2 nd	Write a program in html to show all character entities in html.
	3 rd	Characteristics of Web Applications	3 rd	Write a program in html to create a webpage to show the block level elements and text level elements.
	4 th	WebApplications Vs Conventional Software		
2 nd	5 th	Need for an Engineering Approach.	4 th	Write a program in html to create a webpage to show various confectionary items using ordered list and unordered list.
	6 th	Web Essentials: The Internet	5 th	Write a program in html to create a webpage to

				show different hobbies.
	7 th	Basic Internet Protocols	6 th	Create a web page which displays the map of your state link, each city of the image map, such that the respective HTML page of the city is displayed when the user selects an area.
	8 th	WWW, HTTP (Structure of Request and Response Messages)		
3rd	9 th	Web Browser and its functions	7 th	Write a Program to Create a Nested List.
	10 th	URL, Web Servers and their features	8 th	Write a program in html to create a web page to show registration naukri.com.
	11 th	Defining Virtual Hosts	9 th	Write a program in html to create a web page to show registration naukri.com.
	12 th	Secure Servers		
4th	13 th	Revision	10 th	Write a program in html to show books in inventory in different tables by using rowspan and colspan.
	14 th	Multiple choice Questions	11 th	Create a Web Page in HTML to show Admission form in TIMT.
	15 th	Class Test	12 th	Class Test
	16 th	Assignment Questions: <ul style="list-style-type: none"> • What is the difference between WWW and internet? • What is Web Browser? What are its components? 		

		Explain the features of any two popular Web Browsers		
5 th	17 th	Introduction to HTML, Characteristics of HTML	13 th	A Web Page in HTML to show your resume using Appropriate Formatting Elements.
	18 th	XHTML Syntax and Semantics,	14 th	A Web Page in HTML to show all the Text, Color, Background and Font Elements .
	19 th	Fundamental HTML Elements, Lists, Tables	15 th	Write a program in html to create a webpage with four frames (Picture, table, list, and hyperlink).
	20 th	Frames, Forms		
6 th	21 st	XHTML Abstract Syntax, Creating HTML Pages.	16 th	Design a web page using CSS to display different font styles
	22 nd	Cascading Style Sheets: Features, Core Syntax	17 th	Design a web page using CSS to display different font styles
	23 rd	Types of cascading style sheets	18 th	Design a web page using CSS to set background image for both the page and single elements on page.
	24 th	Style Sheets and HTML		
7 th	25 th	Style Rule Cascading and Inheritance	19 th	Design a web page using CSS to control the repetition of image with background-repeat property
	26 th	Text Properties, CSS Box Model	20 th	Design a web page using CSS to control the repetition of image with background-repeat

				property
	27 th	Normal Flow Box Layout	21 st	Design a web page using CSS to define style for links as a:link, a:active, a:hover, a:visited
	28 th	Positioning and other useful Style Properties		
8 th	29 th	Multiple choice Questions	22 nd	Design a web page using CSS to add customized cursors for links.
	30 th	Class Test	23 rd	Design a web page using CSS to show the work with layers
	31 st	Assignments <ul style="list-style-type: none"> • Explain color management. • Write a website “Haryana TOURISM” using CSS 	24 th	Revision
	32 nd	Client–Side Programming: Introduction to JavaScript		
9 th	33 rd	Basic Syntax, Variables and Data types	25 th	Write a Javascript program to define a user defined function for sorting the values in an array
	34 th	Statements, Operators, Literals	26 th	Write a Javascript program to define a user defined function for sorting the values in an array
	35 th	Functions, Objects, Arrays	27 th	Create an html page to explain the use of various predefined functions in a string
	36 th	Built-in Objects, Debuggers		
10 th	37 th	Server-Side Programming: Servlet Architecture	28 th	Create an html page to explain the use of various predefined functions in a array & Date object in

				Javascript.
	38 th	Generating Dynamic Content, Servlet Life Cycle	29 th	Create an html page to explain the use of various predefined functions in a array & Time object in Javascript.
	39 th	Sessions, Cookies	30 th	Create an html page to demonstrate exception handling in javascript.
	40 th	Servlets and Concurrency		
11 th	41 st	Revision	31 st	Write a java script to validate the various fields in a registration page
	42 nd	Multiple choice Questions	32 nd	Write a java script to validate the various fields in a registration page
	43 rd	Class Test	33 rd	Class Test
	44 th	Assignments <ul style="list-style-type: none"> • Explain the following with examples (in both VB/Java script): (a) Control Statements (b) Functions. • How is embedding done between scripting languages and HTML? Give example. 		
12 th	45 th	XML: Relation between XML, HTML, SGML	34 th	Create a CD catalog using XML file.
	46 th	Goals of XML	35 th	Create a CD catalog using XML file
	47 th	Structure and Syntax of XML	36 th	Create a CD catalog using XML file.
	48 th	Well Formed XML		
13 th	49 th	DTD and its Structure	37 th	Create external style sheet using the CSS in XML

	50 th	Namespaces and Data Typing in XML	38 th	Create external style sheet using the CSS in XML
	51 st	Transforming XML Documents,	39 th	Create external style sheet and using the style sheet in xml file.
	52 nd	XPATH		
14 th	53 rd	Template based Transformations	40 th	Class Test
	54 th	Linking with XML	41 st	Class Test
	55 th	Displaying XML documents in Browsers	42 nd	Revision of Unit 1
	56 th	Multiple choice Questions		
15 th	57 th	Class Test	43 rd	Revision of Unit-2
	58 th	Assignment <ul style="list-style-type: none"> • What are the features of front page? • What is the structure of XML? How can it be connected to Database? 	44 th	Revision of Unit-3
	59 th	Revision		
		60 th	Revision	45 th

