



## **SOPHIA GIRLS' COLLEGE (AUTONOMOUS), AJMER**

**Sophia Girls' College (Autonomous),  
Ajmer**



**Department of Computer Science**

**Course Plan**

**Mr. Gautam Chaturvedi**



# ● Course Plan ●

## Session 2022-23

S.No.	Class	Semester	Paper
1	BCA	I	BCA – 103 Fundamentals of 'C' Programming
2	BCA / IMSC	III	BCA / IMSC 303 Java Programming
3	VCA	III	VCA-301 – Programming in C++ - I
4	BCA / IMSC	II	BCA / IMSC 203 Object Oriented Programming with C++
5	BCA / IMSC	IV	BCA / IMSC 403 Python Programming
6	BCA / IMSC	VI	BCA/IMSC – 606 Project
7	M.Sc. CS	II	MSC-203 - Programming in Python
8	VCA	IV	VCA-401 – Programming in C++ - II



SOPHIA GIRL'S COLLEGE, AJMER (AUTONOMOUS)  
BCA (SEMESTER - I) 2022-23

BCA – 103 Fundamentals of 'C' Programming

Max. Marks :100 (70Ext; 30 Int)

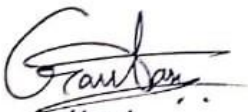
Min. Marks: 40 (28 Ext;12 Int) Credits : 4

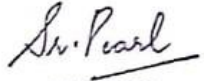
COURSE PLAN

SEM - I Month	UNIT / TOPIC	Concepts / Facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
AUGUST	'C' Language: Character Set, Keywords, Constants, Variables, Data Types, Type Conversion, Instruction & its types: Input Output Instructions, Operators & Expressions: Arithmetic, Relational, Logical, Conditional, Arithmetic Instructions. Control Instructions: Decision Control (if, if-else, if else ladder, nested if, switch case),	Understand the concepts of Programming Logics & Techniques its source and usage & characteristics of 'C' Language and Operators of 'C'.	PPT, Match the following, Demonstration, Problem solving activities, E content	Identify terminology associated with the concepts, techniques, and processes used throughout the 'C' Programming Language	<u>Knowledge Based</u> Define Compiler & Interpreter List operators used in 'C' Language Define functions in 'C'. What is recursion?  <u>Understanding Based</u>	Knowledge--60 Understanding-30 Higher Order-10
SEPTEMBER	Loop Control (while, for, do-while, Nesting Loops), Jump statements (break, continue, goto ) Arrays:- Concept of Arrays, One dimensional array & Two dimensional array, Storage strategy, Array Initialization, Operations on Arrays (traversing, addition, subtraction, transpose), Search – linear & binary. Sorting - bubble sort & selection sort.	Lists utility and implementation of Control Instructions. Understanding different of arrays, how arrays can save memory and different operations of array	PPT, Practical Implementation, assignments, E content	Get familiar with basics input output & Operators of 'C' Language. Able to create / write various control instructions	Which function is best suitable to take input from the user and why? Give comparison between Decision Control & Loop Control statements  Give differences between call by value & call by reference	



OCTOBER	Functions:- Declaration, Calling (Call by value, Call by reference) & Definition of functions, Recursion, Storage Class (auto, static, register, extern), Scope rules (Local, Global). Pointers:- Pointers and addresses, Pointers as Function arguments, Pointers and Arrays, Address Arithmetic. Character Pointers,	Understand types of functions & Pointers with their use  Utility of Storage Classes.	PPT, Practical Implementation, Group Discussion	Acquire knowledge and skills for creation of arrays  Use functions to solve the given problem  Understand storage classes and pointers with their usage	<u>Higher Order Thinking Skills Based</u>  Can creation of multi dimensional arrays help in managing the large amount of data systematically? Justify with example.  Write a 'C' program to print a pyramid on the screen.  Write a program to reverse a string.
NOVEMBER	String handling and String functions (strlen, strcat, strcmp, strcmpi, strcmp, strcpy). Structure and Union: Basics, Structures and Functions, Arrays of Structures, structure pointer variables. Union definition and its use.	Understand how to save strings and implement various string functions Utility of Structure, Union & File Handling, and their creation	PPT, Practical Implementation, Group Discussion, E content	Implement string functions in C language Understand pointers, structure, union, file handling and their usage	Write the steps to a structure to save data of all the books in a library

  
Head  
Department of Computer Science  
Sophia Girls' College  
(Autonomous), Ajmer

  
PRINCIPAL  
SOPHIA GIRLS' COLLEGE  
(AUTONOMOUS)  
AJMER





**SOPHIA GIRL'S COLLEGE, AJMER (AUTONOMOUS)**  
**BCA / IMSC (SEMESTER - III) 2022-23**

**BCA – 303 Java Programming**

Max. Marks :100 (70Ext; 30 Int)

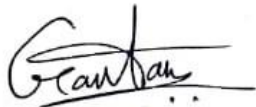
Min. Marks: 40 (28 Ext;12 Int) Credits : 4

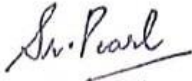
**COURSE PLAN**

SEM - III Month	UNIT / TOPIC	Concepts / Facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
JULY	JAVA: Introduction to Object Orientated Programming, Abstraction, Object Oriented Programming Principles, Features of JAVA, Introduction to JAVA byte code, Program elements; Primitive data types, variables, Input Output in Java, operators: arithmetic, assignment, logical, relational, Boolean logical operators, operator precedence.	Understand the concepts of Object Oriented programming Techniques and usage Java programming basics	PPT, Match the following, Demonstration, Problem solving activities, E content	Identify terminology associated with the concepts, techniques, and processes used throughout the Java Programming Language	<u>Knowledge Based</u> What is OOPs List operators used in Java Language Define Classes in Java. What is Exception Handling?  <u>Understanding Based</u> Which function is best suitable to take input from the user and why? Give comparison between Decision Control & Loop Control statements  Give differences between Classes & Interface	Knowledge--60 Understanding-30 Higher Order-10
AUGUST	Control statements: Java's Selection Statements, if statement, switch statement, Iteration statements, while, do-while, for-each, Nested loop, Jump Statement, using break, continue, return. Arrays, One & Two Dimensional Array, Object and Classes: Objects, constructors, returning and passing objects as parameter.	Lists utility and implementation of Control Instructions. Understanding different of arrays, how arrays can save memory and different operations of array	PPT, Practical Implementation, assignments, E content	Get familiar with basics input output & Able to create / write various control instructions and Classes		



SEPTEMBER	<p>Inheritance: Definition &amp; its Type, Extended class, usage of Super, Overloading and overriding methods, Abstract classes, using final with inheritance.</p> <p>String Handling: String constructors, special string operation, character extraction, searching and comparing string, string Buffer class.</p> <p>Package and Interfaces: Defining package, access modifiers, importing package, Defining and implementing interfaces.</p>	<p>Understand types of Classes with their use</p> <p>Utility of Inheritance, String Handling &amp; Packages</p>	<p>PPT, Practical Implementation, Group Discussion</p>	<p>Acquire knowledge and skills for creation of arrays</p> <p>Use functions to solve the given problem</p> <p>Understand storage classes and pointers with their usage</p>	<p><u>Higher Order Thinking Skills Based</u></p> <p>Can creation of multi dimensional arrays help in managing the large amount of data systematically? Justify with example.</p> <p>Write a Java program to print a pyramid on the screen.</p> <p>Write a program to reverse a string.</p>	
OCTOBER	<p>Exception Handling: Exception handling fundamentals, Exception types, try, catch and multiple catch statements. Usage of throw, throws and finally.</p> <p>Threading: Multithreading, multiprocessing, life cycle of thread, Garbage collection.</p> <p>Applet: applet Fundamentals, applet life cycle, using paint method and drawing polygon</p>	<p>Understand how to do Exception Handling &amp; Multithreading</p> <p>Utility of Applets, Handling, and their creation</p>	<p>PPT, Practical Implementation, Group Discussion, E content</p>	<p>Implement string functions in C language</p> <p>Understand pointers, structure, union, file handling and their usage</p>	<p>Write the steps to a Class to save data of all the books in a library</p>	

  
**Head**  
Department of Computer Science  
Sophia Girls' College  
(Autonomous), Ajmer

  
**PRINCIPAL**  
SOPHIA GIRLS' COLLEGE  
(AUTONOMOUS)  
AJMER



SOPHIA GIRL'S COLLEGE, AJMER (AUTONOMOUS)  
V.C.A. (SEMESTER - III) 2022-23

VCA – 301 C++ Programming - I

Max. Marks :75 (50Ext; 25 Int)

Min. Marks: 30 (20 Ext;10 Int)

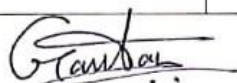
LESSON PLAN

SEM - III Month	UNIT / TOPIC	Concepts/facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
JULY	<ul style="list-style-type: none"><li>Introduction to different types of programming styles</li><li>Introduction to Algorithm, Flowcharts and Pseudocode</li><li>Introduction to C++ identifiers and Keywords, Constants, Variables, and Operators.</li></ul>	Understand the concepts of Programming Logics & Techniques its source and usage & characteristics of 'C++' Language	PPT, Match the following, Demonstration	Identify terminology associated with the concepts, techniques, and processes used throughout the 'C++' Programming Language	<u>Knowledge Based</u> Define Compiler & Interpreter  Give difference between flowchart and algorithm  <u>Understanding Based</u> Make a flowchart to find the greatest of the three numbers	Knowledge-- 45 Understanding -15 Higher Order- 15
AUGUST	<ul style="list-style-type: none"><li>Introduction to data types , operators, type conversion.</li><li>Input Output Instructions (cout, cin, getch ).</li><li>Arithmetic Instructions: Hierarchy.</li><li>Priority and Associativity of Operators.</li></ul>	List the ways of Printing on the screen & Taking input from the user, of 'C++' Language	PPT, Practical Implementation	Get familiar with basics input output & Operators of 'C++' Language.	WAP to print the table of a given number upto a given number	

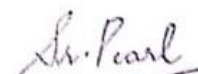




SEPTEMBER	<p>Control Instructions:</p> <ul style="list-style-type: none"> <li>Decision Control (Statements and blocks- if, if-else, conditional operator) nesting.</li> <li>Loop Control (Statements and blocks- while, for, do-while, Nesting Loops),</li> <li>Case Control- (Statements and blocks- switch-case,), break, continue, goto statements</li> </ul> <p>Functions:</p> <ul style="list-style-type: none"> <li>Functions (Structure and Block):- Declaration, Calling (Call by value, Call by reference),</li> <li>Definition of functions, Recursion.</li> </ul>	Lists utility and implementation of Control Instructions	PPT, Practical Implementation	Able to create / write various control instructions	<p><u>Knowledge Based</u></p> <p>Define functions in 'C++'.</p> <p>What is recursion?</p> <p><u>Understanding Based</u></p> <p>Give differences between call by value &amp; call by reference.</p>	
OCTOBER	<p>Storage Class:</p> <ul style="list-style-type: none"> <li>(auto, static, register, extern), Scope rules (Local, Global).</li> </ul> <p>Pointers:</p> <ul style="list-style-type: none"> <li>Pointers and addresses,</li> <li>Pointers as Function arguments,</li> <li>Pointers and Arrays, Address Arithmetic.</li> <li>String Handling and string functions (strlen, strcmp, strcpy, strcat, strcmpi, strcmp, strrev, strcpy).</li> </ul>	Utility of Storage Classes & Pointers	PPT, Quiz	Understand storage classes and pointers with their usage		

  
Head

Department of Computer Science  
Sophia Girls' College  
(Autonomous), Ajmer



PRINCIPAL  
SOPHIA GIRLS' COLLEGE  
(AUTONOMOUS)  
AJMER

2022-23

Page 7





**SOPHIA GIRL'S COLLEGE, AJMER (AUTONOMOUS)**  
**BCA / IMSC (SEMESTER II) 2022-23**

**BCA / IMSC– 203 Object Oriented Programming with C++**

Max. Marks :100 (70Ext; 30 Int)

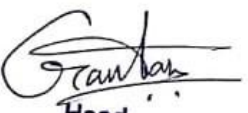
Min. Marks: 40 (28 Ext;12 Int) Credits : 4

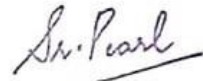
**COURSE PLAN**

SEM II Month	UNIT / TOPIC	Concepts / Facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
DECEMBER	Introduction: to OOP's, Evolution of OOP, Advantages of OOP, Features of OOPS- Objects, Classes, Data Abstraction & Encapsulation, Inheritance, Polymorphism. Comparison between Functional Programming and OOPS (Difference between structure and Class)	Know Features of OOPS  Understand basic characteristics of C++ like character set, operators etc.	PPT, Practical Implementation, Practice questions, worksheet, MCQ'S	Understand and apply OOP's features and C++ concepts	<u>Knowledge Based</u>  What is OOPS?  Define Data Types of C++  <u>Understanding Based</u>  What is Classes & Objects?  Comparison of different types of Polymorphism	Knowledge—50  Understanding-35  Higher Order-15
JANURARY	C++: Character set, Keywords, Constant, Variables, Data types (Built-in, User Defined), Operators & Expressions. Instructions: Input output, Arithmetic, Control (Decision, Case, Loop) and nesting. Classes: data member, member functions, objects, Access specifiers (private, public, protected) arrays of class objects, pointers and classes,	To understand the difference between functional programming & OOPS and where to apply these.	PPT, Practical Implementation MCQ's, assignments, group discussion	Able to use the basic features of oops in the programming		



FEBURARY	constructors(default, parameterized, copy), constructor overloading, destructor, static class member, friend functions. Dynamic memory allocation: New & Delete operator. Inheritance: types of inheritance, member access control, abstract class.	Learn to make classes and use of different features of class.  Use of dynamic memory allocation	PPT, Quiz, practical implementation	Understand the tree data structure and implement its traversing	<u>Higher Order Thinking Skills Based</u>  Write a program to implement real life inheritance.  Is Polymorphism is necessary for the OPPS programming define how.
MARCH	Polymorphism: Binding, Function overloading, Function overriding, Virtual functions, Operator overloading (as a member function & as a friend function) File Handling: ofstream, ifstream, fstream, opening, closing, writing & reading from the file.	How inheritance can be implemented in different ways and comparison of their complexities. Concept of Polymorphism and its types	PPT, Practical, Live Examples,assignments	Analyze inheritance, polymorphism and applying them in the programming	

  
Head  
Department of Computer Science  
Sophia Girls' College  
(Autonomous), Ajmer

  
PRINCIPAL  
SOPHIA GIRLS' COLLEGE  
(AUTONOMOUS)  
AJMER



**SOPHIA GIRL'S COLLEGE, AJMER (AUTONOMOUS)**  
**B.C.A/ IMSC (SEMESTER IV) 2022-23**

**BCA/IMSC – 403 Python Programming**

Max. Marks :100 (70Ext; 30 Int)

Min. Marks: 40 (28 Ext;12 Int) Credits : 4

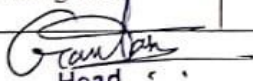
**COURSE PLAN**

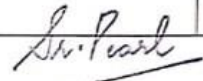
SEM IV Month	UNIT / TOPIC	Concepts / facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
DECEMBER	<b>Introduction:</b> History, Versions, Features, Advantages, Application areas. <b>Python Basics:</b> IDLE, Editors, Keywords, Identifiers, Indents, Input Output Basic Syntax, Variable, Dynamic Typing, Data Types (Mutable and Immutable), Built-in Conversion Methods. <b>Operator:</b> Arithmetic, Comparison, Logical, Identity, Membership. <b>Control Statements:</b> Conditional ( If , If- else, Elself, Nested if-else), Looping (While, For, Nested loops), Break, Continue, Pass.	Use of Python, and its basic features operators & control statements	PPT, Practical Implementation, Hands- on Exercise, Group Discussion	Apply basic features of Python programming	<u>Knowledge Based</u>  What is Membership operator?  Define Loop control Statements of Python  <u>Understanding Based</u>  Implement Array traversing	Knowledge--50 Understanding- 35 Higher Order-15
JANURARY	<b>Array:</b> Introduction, Creation, Traverse, Insertion, Deletion, Search, Update. <b>String:</b> Introduction, Types, Escape Sequences, Formatting, Operators, <b>Built-in Methods</b> (Capitalize, Upper, Lower, Title, Find, Count, Isalpha, Isdigit, Islower, Isupper), Basic Operations (Accessing, Updating, Concatenation).	Need of Array and how to use them in Python. Use of Strings & their built in functions	PPT, Practical Implementation, Hands - on Exercise, problem solving activities	Able to recognize the use of array & strings with their features	Give the utility of built in methods of string	





FEBURARY	<p>List &amp; Tuple: Introduction, Accessing, Operators, Built-in Methods (Len, Max, Min, Append, Insert, Remove, Pop, Reverse, Sort, List), Basic Operations (Updating, Delete, Concatenation, Indexing, Slicing).</p> <p>Set: Introduction, Accessing, Built-in Methods (Add, Update, Clear, Copy, Discard, Remove), Operations (Union, Intersection, Difference).</p> <p>Dictionary: (Single Dimensional) Introduction, Accessing, Updating, Deleting, Viewing values in dictionaries, Built-in Methods (Len, Max, Min, Pop, Clear, Items, Keys, Values, Update).</p>	Understand the concept & use of List, Tuple, Set & Dictionary with all their features.	PPT, Practical Implementation, practice Exercise, problem solving activates	Understand difference between List, Tuple, Set & Dictionary	<p><u>Higher Order Thinking Skills Based</u></p> <p>Write a program to create a List &amp; Dictionary and differentiate them</p> <p>Is Polymorphism is necessary for the OPPS programming define how.</p>
MARCH	<p>Function: Defining, Calling, Function Arguments (Required, Keyword, Default, Variable Length) Anonymous Functions, Global and Local Variables.</p> <p>Modules: Introduction, Importing Module, Built-in Modules (Math, Statistics, Random).</p> <p>Package: Creating, Installing, Importing Modules from the Package.</p> <p>Errors &amp; Exception: Error Types, Exception Handling - Introduction, Try, Except, Else, Finally.</p> <p>File Input-Output: Opening and Closing files, Reading and Writing files.</p>	Understand the use of functions, Packages and need of exception handling	PPT, Practical Implementation, practice on Exercise, problem solving activities	Ability to Text Processing scripts	

  
 Head  
 Department of Computer Science  
 Sophia Girls' College  
 (Autonomous), Aimer

  
 PRINCIPAL  
 SOPHIA GIRLS' COLLEGE  
 (AUTONOMOUS)  
 AIMER





**SOPHIA GIRL'S COLLEGE, AJMER (AUTONOMOUS)**  
**B.C.A /MSC (SEMESTER VI) 2022-23**

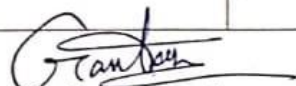
**BCA/MSC– 606 Project**

Max. Marks :100 (70Ext: 30 Int)

Min. Marks: 40 (28 Ext:12 Int) Credits : 4

**COURSE PLAN**

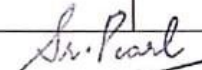
SEM VI Month	UNIT / TOPIC	Concepts / Facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
DECEMBER	Allotment of the Groups and Topics	Learning Team Work & Leadership Responsibilities	Presentation, Library Visit ,E content	Formulate a real world problem and develop its requirements	<u>Knowledge Based</u> Define Qualities of user friendly interface	Knowledge-- 60 Understanding- 30 Higher Order- 10
JANURARY	Creation of User Interface ( Forms / WebPages)	Understand user need & trying to make user friendly Interface	PPT, Practical, Live Examples, Group Discussion	Develop a design solution for a set of requirements	<u>Understanding Based</u>  Which function is best suitable to take input from the user and why?	
FEBURARY	Connectivity with the Database & Report Writing	Understand the technical issues of connecting the interface with the Database	PPT, Practical Implementation	Generate alternative solutions, compare them and select the optimum one	<u>Higher Order Thinking Skills Based</u>  Can creation of multi dimensional arrays help in managing the large amount of data systematically? Justify with example.	
MARCH	Final Submission of the Project Report & Presentation	Learn to make Project Report & its presentation	PPT, Practical Implementation, Group Discussion			

  
**Head**

Department of Computer Science

Sophia Girls' College

(Autonomous) , Ajmer



PRINCIPAL  
 SOPHIA GIRLS' COLLEGE  
 (AUTONOMOUS)

AJMER

2022-23

Page 12



# SOPHIA GIRL'S COLLEGE, AJMER (AUTONOMOUS)

M.Sc. CS (SEMESTER II) 2022-23

MSC – 203 Programming in Python

Max. Marks :100 (70Ext; 30 Int)

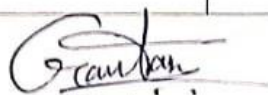
Min. Marks: 40 (28 Ext;12 Int)

## COURSE PLAN

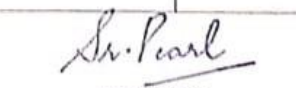
SEM II Month	UNIT / TOPIC	Concepts / facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
DECEMBER	<b>Introduction:</b> History, Versions, Features, Advantages, Application areas. Python Basics: IDLE, Editors, Keywords, Identifiers, Indents, Input Output Basic Syntax, Variable, Dynamic Typing, Data Types (Mutable and Immutable), Built-in Conversion Methods. <b>Operator:</b> Arithmetic, Comparison, Logical, Identity, Membership. <b>Control Statements:</b> Conditional ( If, If- else, Elself, Nested if-else), Looping (While, For, Nested loops), Break, Continue, Pass.	Use of Python, and its basic features operators & control statements	PPT, Practical Implementation, Hands- on Exercise, Group Discussion	Apply basic features of Python programming	<u>Knowledge Based</u>  What is Membership operator?  Define Loop control Statements of Python  <u>Understanding Based</u>  Implement Array traversing	Knowledge--50 Understanding-35 Higher Order-15
JANURARY	<b>Array:</b> Introduction, Creation, Traverse, Insertion, Deletion, Search, Update. <b>String:</b> Introduction, Types, Escape Sequences, Formatting, Operators, Built-in Methods (Capitalize, Upper, Lower, Title, Find, Count, Isalpha, Isdigit, Islower, Isupper), Basic Operations (Accessing, Updating, Concatenation).	Need of Array and how to use them in Python. Use of Strings & their built in functions	PPT, Practical Implementation, Hands - on Exercise, problem solving activities	Able to recognize the use of array & strings with their features	Give the utility of built in methods of string	



FEBURARY	<p><b>List &amp; Tuple:</b> Introduction, Accessing Operators, Built-in Methods (Len, Max, Min, Append, Insert, Remove, Pop, Reverse, Sort, List), Basic Operations (Updating, Delete, Concatenation, Indexing, Slicing).</p> <p><b>Set:</b> Introduction, Accessing, Built-in Methods (Add, Update, Clear, Copy, Discard, Remove), Operations (Union, Intersection, Difference).</p> <p><b>Dictionary:</b> (Single Dimensional) Introduction, Accessing, Updating, Deleting, Viewing values in dictionaries, Built-in Methods (Len, Max, Min, Pop, Clear, Items, Keys, Values, Update).</p>	Understand the concept & use of List, Tuple, Set & Dictionary with all their features.	PPT, Practical Implementation, practice Exercise, problem solving activities	Understand difference between List, Tuple, Set & Dictionary	<p><u>Higher Order Thinking Skills Based</u></p> <p>Write a program to create a List &amp; Dictionary and differentiate them</p>	
MARCH	<p><b>Function:</b> Defining, Calling, Function Arguments (Required, Keyword, Default, Variable Length) Anonymous Functions, Global and Local Variables.</p> <p><b>Modules:</b> Introduction, Importing Module, Built-in Modules (Math, Statistics, Random).</p> <p><b>Package:</b> Creating, Installing, Importing Modules from the Package, Errors &amp; Exception: Error Types.</p> <p><b>Exception Handling</b> - Introduction, Try, Except, Else, Finally.</p> <p><b>File Input-Output:</b> Opening and Closing files, Reading and Writing files.</p>	Understand the use of functions, Packages and need of exception handling	PPT, Practical Implementation, practice on Exercise, problem solving activities	Ability to Text Processing scripts	Is Polymorphism is necessary for the OPPS programming define how.	

  
Head

Department of Computer Science  
Sophia Girls' College  
(Autonomous), Ajmer

  
PRINCIPAL  
SOPHIA GIRLS' COLLEGE  
(AUTONOMOUS)  
AJMER

2022-23

Page 14





**SOPHIA GIRL'S COLLEGE, AJMER (AUTONOMOUS)**  
**V.C.A. (SEMESTER IV) 2022-23**

**VCA- 401 Programming in C++**




Max. Marks :75 (50Ext; 25 Int)

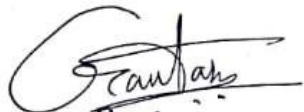
Min. Marks: 30 (20 Ext;10 Int)

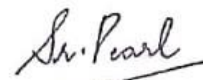
**LESSON PLAN**

SEM - IV Month	UNIT / TOPIC	Concepts/facts	Teaching Pedagogy	Learning Outcomes	Questions	Marks Weightage (%)
DECEMBER	<ul style="list-style-type: none"><li>Classes</li><li>Objects</li><li>Features of OOPS</li><li>Advantages and disadvantages</li><li>Characteristics of OOPS languages</li><li>Terminology of OOPS</li></ul>	Classes, objects, polymorphism, data abstraction, inheritance, over loading	PPT	Understanding the basic concept of OOPS languages and its different terminologies and their meaning	<u>Knowledge Based</u>  What are classes?  What are objects	Knowledge--45 Understanding-15 Higher Order-15
JANURARY	<ul style="list-style-type: none"><li>How to make class?</li><li>How to create objects?</li><li>Member functions</li><li>Data members</li><li>Array of objects</li><li>Constructor</li><li>Destructor</li><li>Function overloading</li></ul>	Classes, objects, data members, creating constructors and destructors, implementing function overloading	PPT , Quiz	Understand the basic concept of OOPS programming language, its structure. Implementing various oops technologies in a program.	<u>Understanding Based</u>  Give difference between structure and class.	



 FEBURARY		 Utility of Compression and various standards, privacy aspects of project	PPT	 Study laws of multimedia and importance of compression technique	<u>Higher Order Thinking Skills Based</u>  WAP with a class called student having a friend function fees which would print the fees of a student. Also inherit a class called defaulter from the above class.	
	<ul style="list-style-type: none"> <li>Static class member</li> <li>Dynamic memory allocation</li> <li>Friend functions</li> </ul>	Understanding the concept of static class members. Using dynamic memory allocation.	PPT, Practical Implementation	Using friend functions in c++.		
MARCH	<ul style="list-style-type: none"> <li>Inheritance</li> <li>Types of Inheritance</li> <li>Advantages and disadvantages of inheritance</li> <li>Function overriding</li> <li>Function over loading</li> </ul>	Understanding the basic concept of Inheritance, its need and importance	PPT, Practical Implementation	Understand the difference between function over loading and function over riding.		

  
**Head**  
 Department of Computer Science  
 Sophia Girls' College  
 (Autonomous), Ajmer

  
**PRINCIPAL**  
 SOPHIA GIRLS' COLLEGE  
 (AUTONOMOUS)  
 AJMER