**PG.GOVT COLLEGE FOR GIRLS, SECTOR-42, CHANDIGARH**

**Teaching Plan Odd Semester (For Ongoing UG Class)**

**Session (2021-2022)**

**Class: BA/BSc IT 3rd Sem**   **Name of the Teacher: Sonika**

**Subject: IT (E) Period: 4 and 6**

**Paper: computer programming using C++ Room No: 103**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 11-08-2021 to 14-08-2021 | Concepts of Object Oriented Programming : Introduction to OOP, Difference between OOP and Procedure Oriented Programming, Object,Class,Encapsulation,Abstraction,Polymorphism, Inheritance. |
| Week 2 | 16-08-2021 to 21-08-2021 | Structure of a C++ Program and I/O streams. Classes and Objects Class Declaration : Data Members, Member Functions, Private and Public members, Creating Objects, Accessing class data members, Accessing member functions. |
| Week 3 | 23-08-2021 to 28-08-2021 | Function Definition: Member Function definition inside the class declaration and outside the class declaration, friend function, inline function, static function. Scope resolution operator, Private and Public member function |
| Week 4 | 31-08-2021 to 04-09-2019 | Nesting of member functions, Arrays within a class. Arrays of Objects, Objects as function arguments: Pass by value, Pass by reference, Pointers to Objects. |
| Week 5 | 06-09-2021 to 11-09-2021 | Constructors and Destructors: Declaration and Definition, Types of Constructors, (Default, Parameterized, Copy Constructors). Destructors: Definition and use. Function Overloading & Operator Overloading. |
| Week 6 | 13-09-2021 to 18-09-2021 | Inheritance - Extending Classes Concept of inheritance, Base class, Defining derived classes, Visibility modes :Public, Private, Protected ; Single inheritance : Privately derived, Publicly derived; |
| Week 7 | 20-09-2021 to 25-09-2021 | Making a protected member inheritable, Access Control to private and protected members by member functions of a derived class |
| Week 8 | 27-09-2021 to 01-10-2021 | Polymorphism: Definition, Application and demonstration of Data Abstraction, |
| Week 9 | 04-10-2021 to 09-10-2021 | Encapsulation and Polymorphism. Early Binding, Polymorphism with pointers, |
| Week 10 | 11-10-2021 to 16-10-2021 | Virtual Functions, Late binding, pure virtual functions. |
| Week 11 | 18-10-2021 to 19-10-2021 | File Processing : Opening and closing of file, stream state member functions, |
| **Mid Semester Exam (21st October 2021 – 30th October 2021)** | | |  | Binary file operations, structures and file operations, classes and file operations, Random file processing |
| Week 12 | 01-11-2021 to 06-11-2021 | Data Structures: Basic Concepts and notations, introduction to Complexity, |
| Week 13 | 08-11-2021 to 13-11-2021 | Data Structure operations ,applications of Data Structure ; |
| Week 14 | 15-11-2021 to 20-11-2021 | Arrays: Introduction, Types of Array, Memory representation, applications and operations; |
| Week 15 | 22-11-2021 to 27-11-2021 | Stacks: Array representation of a stack, operations- initialization, push, pop, empty, and full; applications; Queue: introduction, memory representation, operations- add, remove, initialization; applications ; |
| Week 16 | 29-11-2021 to 30-11-2021 | Linked List: introduction, declaration, operations:-traversing, searching, inserting, deleting; Introduction to circular list. |

**PG.GOVT COLLEGE FOR GIRLS, SECTOR-42, CHANDIGARH**

**Teaching Plan Odd Semester (For Ongoing UG Class)**

**Session (2021-2022)**

**Class: BSc CSc 3rd Sem**   **Name of the Teacher: Sonika**

**Subject: BSc CSc(E) Period: 4 and 6**

**Paper:Object Oriented Programming using Room: CSc Lab 2**

**C++ and computer organisation**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 11-08-2021 to 14-08-2021 | Number system: Binary, Decimal, Hexadecimal, Octal;  Conversions; integer and floating point representation, character codes (ASCII, EBCDIC), error detection and correction codes: Parity bit method, Hamming code; Boolean algebra. |
| Week 2 | 16-08-2021 to 21-08-2021 | Combinatorial logic design : Gates, Half Adder, Full Adder, Encoder, Decoder, Multiplexer |
| Week 3 | 23-08-2021 to 28-08-2021 | Object, Class, Encapsulation, Data Hiding, Inheritance, Polymorphism. Analysis and design of system using Object Oriented Approach, Benefit of OOPs. Structure of a C++ Program : Include files, Declaration of class, Main function, I/O streams. Classes : Class Declaration : Data Members, Member Functions, Private and Public members,  .Functions in C++ : Member function definition inside the class declaration and outside the class declaration |
| Week 4 | 31-08-2021 to 04-09-2019 | Data hiding and encapsulation, arrays within a class.  Objects :Creating Objects, Accessing class data members, Accessing member functions |
| Week 5 | 06-09-2021 to 11-09-2021 | Methods of passing arguments to functions. |
| Week 6 | 13-09-2021 to 18-09-2021 | Arrays of Objects, Objects as function arguments: Pass by value, Pass by Reference |
| Week 7 | 20-09-2021 to 25-09-2021 | Constructors: Declaration and Definition, Default Constructors, Parameterized Constructors, Copy Constructors. Destructors: Definition and use. |
| Week 8 | 27-09-2021 to 01-10-2021 | Sequential Building Block : Flip-Flops, Registers, Counters |
| Week 9 | 04-10-2021 to 09-10-2021 | Synchronous and Asynchronous Counters, Bus. |
| Week 10 | 11-10-2021 to 16-10-2021 | Register Transfer, Arithmetic, Logical and Shift Operations; Instruction :Instruction Format, Instruction cycle |
| Week 11 | 18-10-2021 to 19-10-2021 | Pointers to Objects, Nesting of member functions, Static and  Friend functions. |
| **Mid Semester Exam (21st October 2021 – 30th October 2021)** | | |  | Concept of inheritance, base class, derived class,  defining derived classes, visibility modes, private, public. |
| Week 12 | 01-11-2021 to 06-11-2021 | Concept of inheritance, base class, derived class,  defining derived classes, visibility modes, private, public. |
| Week 13 | 08-11-2021 to 13-11-2021 | single inheritance : privately derived, publicly derived  making a protected member inheritable |
| Week 14 | 15-11-2021 to 20-11-2021 | Architecture of 8086/8088 Processor Model; Instruction Set; Addressing Modes: Registers used in Microprocessor. |
| Week 15 | 22-11-2021 to 27-11-2021 | Features of Assembly Language, Machine Language vs  Assembly Language, Pseudo Instruction; use of Assembly |
| Week 16 | 29-11-2021 to 30-11-2021 | Multilevel inheritance, nesting of classes.  Definition, types, Function overloading, Operator Overloading, Virtual functions and pure virtual functions. |