**Post Graduate Government College for Girls, Sector-42, Chandigarh**

**Teaching Plan for Bachelors (Third and Fifth Semester) and Post Graduate (Third Semester)**

**Session (2020-2021)**

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

**Subject: IT(E) Paper: Computer Programming using C++**

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| **S. No** | **Dates** | **Topics to be Covered** |
| Week 1 | 03/08/2020 – 08/08/2020 | Concepts of Object Oriented Programming : Introduction to OOP, Difference between OOP and Procedure Oriented Programming, Object,Class,Encapsulation,Abstraction,Polymorphism, Inheritance. |
| Week 2 | 10/08/2020 – 14/08/2020 | 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 | 17/08/2020 – 22/08/2020 | 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 | 24/08/2020 – 29/08/2020 | 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 | 31/08/2020- 05/09/2020 | Constructors and Destructors: Declaration and Definition, Types of Constructors, (Default, Parameterized, Copy Constructors). Destructors: Definition and use. Function Overloading & Operator Overloading. |
| Week 6 | 07/09/2020- 12/09/2020 | Inheritance - Extending Classes Concept of inheritance, Base class, Defining derived classes, Visibility modes :Public, Private, Protected ; Single inheritance : Privately derived, Publicly derived; |
| Week 7 | 14/09/2020- 19/09/2020 | Making a protected member inheritable, Access Control to private and protected members by member functions of a derived class |
| Week 8 | 21/09/2020- 26/09/2020 | Polymorphism: Definition, Application and demonstration of Data Abstraction, |
| Week 9 | 28/09/2020- 03/10/2020 | Encapsulation and Polymorphism. Early Binding, Polymorphism with pointers, |
| Week 10 | 05/10/2020- 10/10/2020 | Virtual Functions, Late binding, pure virtual functions. |
| Week 11 | 12/10/2020- 16/10/2020 | File Processing : Opening and closing of file, stream state member functions, |
| Week 12 | 19/10/2020- 24/10/2020 | Binary file operations, structures and file operations, classes and file operations, Random file processing |
| Week 13 | 27/10/2020- 30/10/2020 | Data Structures: Basic Concepts and notations, introduction to Complexity, |
| Week 14 | 03/11/2020- 07/11/2020 | Data Structure operations ,applications of Data Structure ; |
| Week 15 | 09/11/2020- 12/11/2020 | Arrays: Introduction, Types of Array, Memory representation, applications and operations; |
| Week 16 | 16/11/2020- 21/11/2020 | Stacks: Array representation of a stack, operations- initialization, push, pop, empty, and full; applications; Queue: introduction, memory representation, operations- add, remove, initialization; applications ; |
| Week 17 | 23/11/2020- 28/11/2020 | Linked List: introduction, declaration, operations:-traversing, searching, inserting, deleting; Introduction to circular list. |
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