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

**Teaching Plan for Bachelors (FIRST SEMESTER)**

**Session (2020-2021)**

**Class: BSc CS 1st SEM**   **Name of the Teacher: Sonika**

**Subject: CS(E) Paper: Computer Fundamentals**

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| **S. No** | **Dates** | **Topics to be Covered** |
| Week 1 | 01/09/2020 – 05/09/2020 | **Computer Appreciation:** Introduction to computers, characteristics of computer; History of computers; Classification of computers on size: (Micro, Mini, Mainframe and super computers), Working Principles, Generations; Applications of computers; commonly used terms–Hardware, Software, Firmware. |
| Week 2 | 07/09/2020 – 12/09/2020 | Basic Computer Organization: Block diagram of computer system, Input unit, Processing Unit and Output Unit |
| Week 3 | 14/09/2020 – 19/09/2020 | Description of Computer input devices: Keyboard, Mouse |
| Week 4 | 21/09/2020 – 26/09/2020 | Trackball, Pen, Touch screens |
| Week 5 | 28/09/2020- 03/10/2020 | Scanner, Digital Camera; Output devices: Monitors |
| Week 6 | 05/10/2020- 10/10/2020 | Printers, Plotters. |
| Week 7 | 12/10/2020- 16/10/2020 | Representation of information: BIT, BYTE, Memory, Memory size |
| Week 8 | 19/10/2020- 24/10/2020 | Units of measurement of storage; Main memory: main memory organization, RAM, ROM, PROM, EPROM |
| Week 9 | 27/10/2020- 30/10/2020 | Secondary storage devices: Sequential Access Memory, Direct Access Memory |
| Week 10 | 03/11/2020- 07/11/2020 | Magnetic Tapes, Magnetic disks, Optical disks: CD, DVD |
| Week 11 | 09/11/2020- 12/11/2020 | Memory storage devices: Flash Drive, Memory card |
| Week 12 | 16/11/2020- 21/11/2020 | System and Application software; **Programming Languages**: Generation of Languages; Translators - Interpreters, Compilers |
| Week 13 | 23/11/2020- 28/11/2020 | Assemblers and their comparison. |
| Week 14 | 01/12/2020- 05/12/2020 | **Range of Applications**: Scientific, Word Processing, Spread Sheets, E-commerce, Business, Educational, Industrial, National level weather forecasting, Remote Sensing, Planning Multilingual Applications. |
| Week 15 | 07/12/2020- 12/12/2020 | Types of Operating System; Linux/Dos/Windows. |
| Week 16 | 14/12/2020- 18/12/2020 | **Operating Systems** : Components of Operating System,Functions of Operating System |
| Week 17 | 21/12/2020- 26/12/2020 | **Computers and Communication**: Single user, multi-user, workstation, and client server systems. Computer networks, Network protocols. LAN, WAN, Services offered by Internet. |

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

**Teaching Plan for Bachelors (FIRST SEMESTER)**

**Session (2020-2021)**

**Class: BSc CS 1st SEM**   **Name of the Teacher: Sonika**

**Subject: CS(E) Paper: PC Software**

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| **S. No** | **Dates** | **Topics to be Covered** |
| Week 1 | 01/09/2020 – 05/09/2020 | Concept of files and directories; Disk Operating System: DOS, System Files, types of DOS commands: Internal commands |
| Week 2 | 07/09/2020 – 12/09/2020 | External commands: Introduction to AUTOEXEC.BAT, Directory commands: XCOPY, DEL, RENAME, ATTRIB, BACKUP, RESTORE, FIND, SYS; General commands: TYPE, DATE, TIME, PROMPT; Batch Files, Wild Cards, Line Editor. |
| Week 3 | 14/09/2020 – 19/09/2020 | Introduction to graphical user interface, window operating system |
| Week 4 | 21/09/2020 – 26/09/2020 | Anatomy of windows, organizing folders and files, recycle bin, my computer, windows explorer, control panel. |
| Week 5 | 28/09/2020- 03/10/2020 | *Word Processing :* Basics of Word Processing; Opening, Creating, Saving, Printing and Quitting Documents, Using the Interface |
| Week 6 | 05/10/2020- 10/10/2020 | (Menu Toolbars), Editing Text (Copy, Delete, Move), Finding and Replacing Text, Spell Check, Autocorrect; Auto Text, Character formatting, Page formatting; |
| Week 7 | 12/10/2020- 16/10/2020 | Document Enhancement; Adding Borders and shading, Adding Headers and Footers, Setting up Multiple columns |
| Week 8 | 19/10/2020- 24/10/2020 | Sorting blocks, Adjusting Margins and Hyphenating Documents, |
| Week 9 | 27/10/2020- 30/10/2020 | Creating Master Documents, Creating Data Source |
| Week 10 | 03/11/2020- 07/11/2020 | Merging Documents, Using Mail merge feature for labels and envelops |
| Week 11 | 09/11/2020- 12/11/2020 | Inserting Pictures, Tables, Working with equations. |
| Week 12 | 16/11/2020- 21/11/2020 | Worksheet overview, Row, Column, Cells, Menus, Creating Worksheet, Opening, Saving,Printing Worksheets; |
| Week 13 | 23/11/2020- 28/11/2020 | Calculations, Auto fill, Working with Formulae, Data Formatting (number formatting, date formatting), Working with Ranges, |
| Week 14 | 01/12/2020- 05/12/2020 | Establishing Worksheet links; Creating, Sorting and Filtering Data Base; Creating chart, Adding Titles, Legends etc. to charts, |
| Week 15 | 07/12/2020- 12/12/2020 | Printing Charts, Creating Macros, Record Macros, Running Macros |
| Week 16 | 14/12/2020- 18/12/2020 | Assigning Macros to Buttons, Functions (Statistical, Financial, Mathematical, String, Date and Time). |
| Week 17 | 21/12/2020- 26/12/2020 | MS-Power Point: Creating, Saving, Printing Presentation; Selecting Design Templates, Animations and Transitions, Auto Content Wizard. |

**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: CS 3rd Sem**  **Name of the Teacher: Sonika**

**Subject: Computer Sc.(E) Paper: Object Oriented Programming using C++ and Computer Organization**

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| **S. No** | **Dates** | **Topics to be Covered** |
| Week 1 | 03/08/2020 – 08/08/2020 | 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 | 10/08/2020 – 14/08/2020 | Combinatorial logic design : Gates, Half Adder, Full Adder, Encoder, Decoder, Multiplexer |
| Week 3 | 17/08/2020 – 22/08/2020 | 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 | 24/08/2020 – 29/08/2020 | Data hiding and encapsulation, arrays within a class.  Objects :Creating Objects, Accessing class data members, Accessing member functions |
| Week 5 | 31/08/2020- 05/09/2020 | Methods of passing arguments to functions. |
| Week 6 | 07/09/2020- 12/09/2020 | Arrays of Objects, Objects as function arguments: Pass by value, Pass by Reference |
| Week 7 | 14/09/2020- 19/09/2020 | Constructors: Declaration and Definition, Default Constructors, Parameterized Constructors, Copy Constructors. Destructors: Definition and use. |
| Week 8 | 21/09/2020- 26/09/2020 | Sequential Building Block : Flip-Flops, Registers, Counters |
| Week 9 | 28/09/2020- 03/10/2020 | Synchronous and Asynchronous Counters, Bus. |
| Week 10 | 05/10/2020- 10/10/2020 | Register Transfer, Arithmetic, Logical and Shift Operations; Instruction :Instruction Format, Instruction cycle |
| Week 11 | 12/10/2020- 16/10/2020 | Pointers to Objects, Nesting of member functions, Static and  Friend functions. |
| Week 12 | 19/10/2020- 24/10/2020 | Concept of inheritance, base class, derived class,  defining derived classes, visibility modes, private, public. |
| Week 13 | 27/10/2020- 30/10/2020 | single inheritance : privately derived, publicly derived  making a protected member inheritable |
| Week 14 | 03/11/2020- 07/11/2020 | Architecture of 8086/8088 Processor Model; Instruction Set; Addressing Modes: Registers used in Microprocessor. |
| Week 15 | 09/11/2020- 12/11/2020 | Features of Assembly Language, Machine Language vs  Assembly Language, Pseudo Instruction; use of Assembly |
| Week 16 | 16/11/2020- 21/11/2020 | Multilevel inheritance, nesting of classes. |
| Week 17 | 23/11/2020- 28/11/2020 | Definition, types, Function overloading, Operator Overloading, Virtual functions and pure virtual functions. |

**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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