**Curriculum plan (Even Semester 2020-21)**

**Paper name: Programming in C++**

**Class type: BSc. Physical Science IV semester (SEC)**

**Paper shared with: NIL**

**Teacher Name: Neha Singh**

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| **Unit to be taken** | **Month wise schedule to be followed** | **Tests/Assignments/ Revision/Presentations etc** |
| **Unit 1 Introduction to C++:**  Need and characteristics of Object-Oriented Programming, Structure of a C++ Program (main () function, header files, output, input, comments), compile and execute a simple program. | Jan (Week II) |  |
| **Unit 2 Data types and Expression:**  Keywords, built in data types, variables and constants, naming convention, Input-Output statements, expressions and operators, precedence of operators, typecasting, library functions. | Jan (Week III, IV) | Quiz Unit 1 |
| **Unit 3 Control Constructs in C++ :**  Decision making using selection constructs, looping constructs, control constructs. | Jan Week (V) Feb (Week I) | Revision Unit II  Presentation Unit I, II |
| **Unit 4 User defined Data types and functions:**  User defined data types, defining and initializing structures  derived data types, defining and initializing single and multi-dimensional arrays  user defined functions, passing arguments to functions, returning values from functions, inline functions, default arguments. | Feb (Week II, III)  Feb (Week III,IV)  Feb (Week IV) March (Week I) | Test Unit II Assignment I Presentation Unit III |
| **Unit 5 Classes and Objects:**  Need of abstraction, encapsulation, inheritance and polymorphism, creating classes, objects as function arguments, modifiers and access control  constructors and destructors  Implementation of single level inheritance, implementation of polymorphism, function overloading. | March (Week II, III)  March (Week IV, V)  April (Week I, II) | Test Unit III  Assignment II  Test Unit IV |
| **Unit 6 File Handling:**  File I/O Basics, read and write operations. | April (Week III)  April (Week IV,V) | Test Unit V Revision |

**References**

1. **Lafore, R. Object Oriented Programming in C++ (4th Edition). SAMS Publishing.**

**Name of teacher: Neha Singh**

**Signature**