<u>**Course Syllabi: UTA009 Computer Programming - II (L : T : P :: 3 : 0 : 2)**</u>

1. **Course number and name**: UTA009 Computer Programming- II

2. **Credits and contact hours**: 4.0 and 5

3. **Text book, title, author, and year**

   Text Books / Reference Books
   - *"Balaguruswamy", Object Oriented Programming with C++ 6th Edition, Tata Mcgraw Hill, 2013.*
   - *"Bruce Eckel", Thinking in C++, Prentice-Hall of India Pvt. Ltd, 2000.*
   - *"Joyce Farrell", Object Oriented Programming Using C++ 4th Edition, Cengage Learning, 2013.*
   - *https://msdn.microsoft.com/en-s/library/windows/desktop/ff381399(v=vs.85).aspx*

     a. Other supplemental materials
        - Nil

4. **Specific course information**
   a. Brief description of the content of the course (catalog description)
   Object Oriented Programming with C++: Class declaration, creating objects, accessing objects members, nested member functions, memory allocation for class, objects, static data members and functions. Array of objects, dynamic memory allocation, this pointer, nested classes, friend functions, constructors and destructors, constructor overloading, copy constructors, operator overloading and type conversions.
   Inheritance and Polymorphism: Single inheritance, multi-level inheritance, multiple inheritance, runtime polymorphism, virtual constructors and destructors.
   File handling: Stream in C++, Files modes, File pointer and manipulators, type of files, accepting command line arguments.
   Templates and Exception Handling: Use of templates, function templates, class templates, handling exceptions.
   Introduction to Windows Programming in C++: Writing program for Windows, using COM in Windows Program, Windows Graphics, User Input
   Laboratory work: to implement Programs for various kinds of programming constructs in C++ Language.

5. **Specific goals for the course**
   After the completion of the course, the students will be able to:
   - Write, compile and debug programs in C++, use different data types, operators and I/O function in a computer program.
   - Comprehend the concepts of classes, objects and apply basics of object oriented programming, polymorphism and inheritance.
   - Demonstrate use of file handling.
   - Demonstrate use of templates and exception handling.
   - Demonstrate use of windows programming concepts using C++.

6. **Brief list of topics to be covered**
   - Class

- Object
- Inheritance
- Polymorphism
- File handling
- Exception handling