

FACULTY OF COMPUTER APPLICATIONS
Bachelor of Science (Information Technology)
B.Sc. (IT)

- **Sem.** : 3
- **Subject Code** : 05BS0503
- **Subject** : Mini Project-1 (C++)
- **Course Objectives** :
 1. Learn to implement basic structure of C++
 2. Learn to use various Object Oriented features like inheritance, polymorphism etc.
 3. Learn the usage of various functions like inline, friend, virtual
 4. Learn the usage of file handling mechanism
 5. Learn the usage of generic programming

- **Prerequisites** : Working knowledge of C++

- **Guidelines** :
 1. The students should be evaluated on the basis of their knowledge of C++. The program should exhibit student's knowledge of C++ and not the domain in which s/he has worked. The coding ability of the student should take preference over their domain knowledge. The entire project should be evaluated on the basis of the code. [Documentation and presentation are not mandatory. The prime parameter of evaluation should be the code only]
 2. The system developed by students can be evaluated on the basis of following points:
 - a. All the programs must be strictly developed in C++ language only
 - b. Check should be made that the concepts required in the problem are correctly implemented. This can be checked based on :
 - i. Properly defined necessary classes
 - ii. Possible Constructors and Destructors
 - iii. Class design to designate the level of abstraction
 - iv. Proper usage of public/private/protected access specifiers
 - v. Efficient usage of operator overloading
 - vi. Justification for member functions defined inside or outside of the class.

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- vii. Use of inline functions wherever applicable
- viii. Use of friend functions and justification for the same
- ix. Usage of inheritance
 - x. Use of containership and justification for the same
- xi. Usage of generic programming
- xii. Usage of STL
- xiii. Solution using using virtual function or RTTI or using casting operators like `dynamic_cast`
- xiv. Efficient usage of namespace
- xv. Appropriate usage of file handling mechanism
- xvi. Use of manipulators for formatted output

Course Outcomes :

1. Student will be able to implement basic structure of C++ programming
2. Student will be able to efficiently use Object Oriented features
3. Student will be able to identify the cases where various functions like inline, friend, virtual can be used.
4. Student will be able to handle the files.
5. Student will be able to use the generic programming

Course Outcomes – Program Outcomes Mapping Table :

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	H	H			H	M		H
CO2	H	H	M	M	H			H
CO3	H	H	H	M	H			H
CO4	H	M	H	H	H			H
CO5	H	H	H		H	H		H

Reference Books :

1. **Object-Oriented Programming in C++, Robert Lafore, SAMS, Fourth Edition**
2. **Thinking in C++ Volume 2: Practical Programming, Bruce Eckel & Chuck Alison , Pearson, First Edition**
3. **C++ Primer, Stanley Lippman, Josee Lajoie & Barbara E Moo, Pearson, Fifth Edition**