

Object Oriented Programming through C++ Lab

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|----------------------------------------|----------|--------------------------------|-------|----------------------|---------------------------------|
| Course Code | 20CS3351 | Year | II | Semester | I |
| Course Category | PCC Lab | Branch | CSE | Course Type | Practical |
| Credits | 1.5 | L-T-P | 0-0-3 | Prerequisites | Programming for Problem Solving |
| Continuous Internal Evaluation: | 15 | Semester end evaluation | 35 | Total Marks | 50 |

| Course Outcomes | | |
|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-----------|
| Upon successful completion of the course, the student will be able to | | |
| CO1 | Apply Object oriented principles/ C++ constructs for solving problems. | L3 |
| CO2 | Implement programs as an individual on different IDEs/ online platforms. | L3 |
| CO3 | Develop an effective report based on various programs implemented. | L3 |
| CO4 | Apply technical knowledge for a given problem and express with an effective oral communication. | L3 |
| CO5 | Analyze outputs using given constraints/test cases. | L4 |

| Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations | | | | | | | | | | | | | | |
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| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| CO1 | | | | | | | | | | | | | √ | |
| CO2 | | | | | √ | | | | √ | | | | | |
| CO3 | | | | | | | | | | √ | | | | |
| CO4 | √ | | | | | | | | | √ | | | | |
| CO5 | | | √ | | | | | | | | | | | |

| Syllabus | | |
|-----------------|----------------------------------------------------------------------------------------------------|----------------------------|
| Expt No. | Contents | Mapped CO |
| 1 | Implement programs on predefined streams. | CO1,CO2,CO3,CO4,CO5 |
| 2 | Implement programs using functions (passing arguments, overloading). | CO1,CO2,CO3,CO4,CO5 |
| 3 | Implement programs using class/object concepts. (Access specifiers, class members, static members) | CO1,CO2,CO3,CO4,CO5 |
| 4 | Implement programs using friend functions. | CO1,CO2,CO3,CO4,CO5 |
| 5 | Implement programs using constructor(s) and destructor. | CO1,CO2,CO3,CO4,CO5 |
| 6 | Implement programs using operator overloading. | CO1,CO2,CO3,CO4,CO5 |
| 7 | Implement various types of inheritance techniques. | CO1,CO2,CO3,CO4,CO5 |
| 8 | Implement programs using virtual functions to achieve polymorphism. | CO1,CO2,CO3,CO4,CO5 |
| 9 | Implement programs using FileStreams | CO1,CO2,CO3,CO4,CO5 |
| 10 | Implement programs on exception handling concepts. | CO1,CO2,CO3,CO4,CO5 |
| 11 | Implement programs on generic programming concept with templates. | CO1,CO2,CO3,CO4,CO5 |
| 12 | Implement containers in C++ (Sequence Containers and Associative Containers). | CO1,CO2,CO3,CO4,CO5 |

Learning Resources

Text Books

1. Object-Oriented Programming in C++, Robert Lafore, Fourt Edition, 2002, SAMS.
2. Object-Oriented Programming with C++, E Balagurusamy, Eighth Edition, 2020, Mc Graw Hill.

References

1. The C++ Programming Language, Bjarne Stroustrup, Fourth Edition, 2013, Addison-Wesley.
2. Object-Oriented Programming Using C++ Paperback, Joyce Farrell, Fourth Edition, 2013, Cengage.

e-Resources and other Digital Material

1. <https://www.learncpp.com/>
2. https://onlinecourses.nptel.ac.in/noc21_cs02/preview
3. <https://www.educative.io/courses/learn-object-oriented-programming-in-cpp>
4. <https://www.youtube.com/watch?v=wN0x9eZLix4> (Learn Object Oriented Programming in C++, Beau Carnes, February 2021)