

Maharashtra State Board of Technical Education, Mumbai

LABORATORY PRACTICAL PLANNING (LP)

Academic Year: 2026-27 (ODD)

Date: -01/07/2026

Institute Name: K. K. Wagh Polytechnic, Nashik

MSBTE Code: 0078

Program and Code: Information Technology (IF)

Course Code & Abbr.: 313304 (OOP)

Course Name: Object Oriented Programming using C++

Course Index: 304 **Learning Hrs.** 30

Name of Faculty: Mrs.C.P.Borade

Semester: 3rd

Scheme: K

CLASS: SYIF (Cray)

● Teaching-Learning & Assessment Scheme:

Course Code	Course Title & Abbr	Course Category	Learning Scheme							Assessment Scheme										
			Actual Contact Hrs/Week			SLH	NLH	Credits	Paper Duration (Hrs.)	Theory			Based on LL & TSL Practical				Based on SL		Total Marks	
			CL	TL	LL					FA TH	SA TH	Total		FA-PR		SA-PR		SLA		
												Max	Max	Max	Min	Max	Min	Max		Min
313304	OBJECT ORIENTED PROGRAMMING USING C++ (OOP)	SEC	3	2	4	1	10	5	3	30	70	100	40	50	20	25@	10	25	10	200

Abbreviations: CL- Class Room Learning , TL- Tutorial Learning, LL-Laboratory Learning, SLH-Self Learning Hours, NLH-Notional Learning Hours, FA - Formative Assessment, SA -Summative assessment, IKS – Indian Knowledge System, SLA - Self Learning Assessment
Legends: @ Internal Assessment, # External Assessment, *# on Line Examination, @\$ Internal Online Examination

● COURSE LEVEL LEARNING OUTCOMES (COS)

By learning course OBJECT ORIENTED PROGRAMMING USING C++ (OOP) Second Year students will be able to achieve & demonstrate the following COs on completion of course based learning.

- CO1 - Write C++ programs using classes and objects.
- CO2 - Develop C++ programs using constructors.
- CO3 - Implement Inheritance in C++.
- CO4 - Implement Polymorphism in C++.
- CO5 - Develop C++ programs to perform file operations.

● COs, Practical Laboratory Learning Outcome (LLOs) and Mapping:

Pr. No	LLO	Name of Experiments/Assignment/ Sheet/ Job/ Project Activity	Planned Date	Performance Date	Remark	Related self-learning (if any)
1	LLO 1.1	*Write programs to evaluate any expression using Input / Output functions	A-02/07/2026 B-01/07/2026 C-04/07/2026	A- B- C-		
2	LLO 2.1	*Write programs using- - Scope resolution operator - Memory management operator - Manipulators	A-06/07/2026 B-02/07/2026 C-07/07/2026	A- B- C-		

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Pr. No	LLO	Name of Experiments/Assignment/Sheet/ Job/ Project Activity	Planned Date	Performance Date	Remark	Related self-learning (if any)
3	LLO 3.1	Write programs to demonstrate use of- - Implicit type casting - Explicit type casting	A-09/07/2026 B-09/07/2026 C-11/07/2026	A- B- C-		
4	LLO 4.1	Write programs to show use of classes and objects to define the function inside the class	A-13/07/2026 B-09/07/2026 C-14/07/2026	A- B- C-		
5	LLO 5.1	*Write programs to define the function outside the class	A-16/07/2026 B-15/07/2026 C-18/07/2026	A- B- C-		
6	LLO 6.1	*Write programs to implement inline function	A-20/07/2026 B-16/07/2026 C-21/07/2026	A- B- C-		
7	LLO 7.1	*Write programs to implement friend function using- - Two different classes - External function	A-23/07/2026 B-22/07/2026 C-25/07/2026	A- B- C-		
8	LLO 8.1	*Write programs to implement- - Static data member - Static member function	A-27/07/2026 B-23/07/2026 C-28/07/2026	A- B- C-		
9	LLO 9.1	*Write programs to create array of objects	A-30/07/2026 B-29/07/2026 C-01/08/2026	A- B- C-		
10	LLO 10.1	*Write programs for- - Default constructor - Parameterized constructor - Copy constructor - Multiple constructor in one class	A-03/08/2026 B-30/07/2026 C-04/08/2026	A- B- C-		

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Pr. No	LLO	Name of Experiments/Assignment/Sheet/ Job/ Project Activity	Planned Date	Performance Date	Remark	Related self-learning (if any)
11	LLO 11.1	Write programs using- • Single level inheritance • Multilevel inheritance	A-06/08/2026 B-05/08/2026 C-08/08/2026	A- B- C-		
12	LLO 12.1	*Write programs to implement multiple inheritance	A-13/08/2026 B-06/08/2026 C-18/08/2026	A- B- C-		
13	LLO 13.1	Write programs to implement hierarchical inheritance	A-17/08/2026 B-13/08/2026 C-22/08/2026	A- B- C-		
14	LLO 14.1	*Write programs to implement virtual base class.	A-20/08/2026 B-19/08/2026 C-25/08/2026	A- B- C-		
15	LLO 15.1	Write programs which show the use of constructors in derived class	A-24/08/2026 B-20/08/2026 C-29/08/2026	A- B- C-		
16	LLO 16.1	*Write programs to implement- • Pointer to object • 'this' pointer	A-27/08/2026 B-27/08/2026 C-01/09/2026	A- B- C-		
17	LLO 17.1	*Write programs for- • Pointer to derived class in single inheritance • Pointer to derived class in multilevel inheritance	A-03/09/2026 B-02/09/2026 C-05/09/2026	A- B- C-		
18	LLO 18.1	Write programs which show the use of function overloading	A-07/09/2026 B-03/09/2026 C-08/09/2026	A- B- C-		

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Pr. No	LLO	Name of Experiments/Assignment/Sheet/ Job/ Project Activity	Planned Date	Performance Date	Remark	Related self-learning (if any)
19	LLO 19.1	*Write programs to overload unary operator using- - Member function - Friend function	A-10/09/2026 B-09/09/2026 C-12/09/2026	A- B- C-		
20	LLO 20.1	Write programs to overload binary operator using- - Member function - Friend function	A-17/09/2026 B-10/09/2026 C-15/09/2026	A- B- C-		
21	LLO 21.1	*Write programs to implement virtual function	A-21/09/2026 B-16/09/2026 C-19/09/2026	A- B- C-		
22	LLO 22.1	Write programs to implement pure virtual function	A-24/09/2026 B-17/09/2026 C-22/09/2026	A- B- C-		
23	LLO 23.1	*Write programs to read and write from/to file using- - Constructor - open()	A-28/09/2026 B-23/09/2026 C-26/09/2026	A- B- C-		
24	LLO 24.1	Write programs to copy the content of one file into another file using formatted input/output functions	A-01/10/2026 B-24/09/2026 C-29/09/2026	A- B- C-		
25	LLO 25.1	Write file programs to implement sequential input and output operations on file	A-05/10/2026 B-30/09/2026 C-03/10/2026	A- B- C-		
26	LLO 26.1	Write programs to perform input / output operations on binary files	A-08/10/2026 B-01/10/2026 C-06/10/2026	A- B- C-		
		*Content Beyond Syllabus Template in C++	A-03/08/2026 B-05/08/2026 C-04/08/2026	A- B- C-		

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ASSESSMENT METHODOLOGIES/TOOLS

A. Formative assessment (Assessment for Learning) (FA-TH)

- Continuous assessment based on process and product related performance indicators. Each practical will be assessed considering
 - 60% weightage is to process
 - 40% weightage to product

B. Summative Assessment (Assessment of Learning) (SA-TH)

- End semester examination, Lab performance, Viva voce

Assignment

- Solve an assignment on any relevant topic given by the teacher.

Mrs.C.P.Borade
(Name & Signature of Staff)

Ms. M. S. Karande
(Name & Signature of HOD)