



Kasegaon Education Society (KES)

Rajarambapu Institute of Technology (RIT)

DEPARTMENT OF INFORMATION TECHNOLOGY

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## Laboratory Plan

Laboratory Course Plan: B.Tech. in IT 2016-2020

Laboratory Title: <b>Object Oriented Design and Programming Laboratory</b>	Lab. Code: <b>IT2521</b>
Total Hours: <b>6</b>	Duration of SEE Hours: <b>2</b>
SEE Marks: <b>50</b>	CIE Marks: <b>50</b>
Lab. Plan Author: Miss.PragatiSawant	Date: 6-01-2018
Checked By: Dr. A. C. Adamuthe	Date: 7-01-2018

### Course Outcomes (COs):

At the end of the course the student should be able to:

Apply c++ features to program design and implementation.

Identify and implement suitable function implementation facilities.

Implementation of advanced concepts of array and pointers.

Implementation of function and operator overloading.

Design c++ classes for code reuse.

Implementation of file and streams for permanent storage of data.

Use exception handling in c++ programs



**Course Articulation Matrix: Mapping of Course Outcomes (CO) with Program Outcomes**

Course Title: Object Oriented Design and Programming Laboratory	Semester: 4 - Semester
Course Code: IT2521	Year:

Course Outcomes / Program Outcomes	1	2	3	4	5	6	7	8	9	10	11	12	PSO1	PSO2
Apply c++ features to program design and implementation.			3										3	
Identify and implement suitable function implementation facilities.	3	1											1	
Implementation of advanced concepts of array and pointers.	3													
Implementation of function and operator overloading.		3												
Design c++ classes for code reuse.		3	3										3	
Implementation of file and streams for permanent storage of data.	3													
Use exception handling in c++ programs		3	3											

**Experiment wise Plan****List of experiments/jobs planned to meet the requirements of the course.**

<b>Category: Demonstration</b>		<b>No. of lab sessions: 30.00</b>		
<b>Expt./ Job No.</b>	<b>Experiment / Job Details</b>	<b>Marks / Experiment</b>	<b>Planned Delivery date</b>	<b>Actual Delivery date</b>
1	Class & Object	30.00		
	Learning Outcomes: The students should be able to: 1. Apply object- oriented programming principles 2. Differentiate between procedure-oriented & object-oriented programming 3. Formulate real world problem into programming paradigm especially using class and objects			
2	Inline Function	30.00		
	Learning Outcomes: The students should be able to: 1. To Identify the use of inline function. 2. To Analyze advantages and disadvantages of inline function. 3. To implement inline function.			
3	Constructor & Destructor	30.00		
	Learning Outcomes: The students should be able to: 1. To choose appropriate type of constructor for given problem. 2. To use constructor to initialize variables of a clas. 3. To use destructor to release memory held by variable. 4. To demonstrate constructor and destructor.			



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4	Friend Function & Friend Class	30.00		
	Learning Outcomes: The students should be able to: <ol style="list-style-type: none"><li>1. To implement a program using friend function and friend class.</li><li>2. To demonstrate use of friend function and friend class.</li></ol>			
5	Arrays	30.00		
	Learning Outcomes: The students should be able to: <ol style="list-style-type: none"><li>1. To implement programs for multidimensional array.</li><li>2. To demonstrate how to pass array to functions and return array from function.</li></ol>			
6	Pointers	30.00		
	Learning Outcomes: The students should be able to: <ol style="list-style-type: none"><li>1. To use pointers efficiently in c++ program.</li><li>2. To conduct arithmetical operations on pointers.</li></ol>			
7	Function overloading	30.00		
	Learning Outcomes: The students should be able to: <ol style="list-style-type: none"><li>1. To implement a program using function overloading for a given problem statement.</li></ol>			
8	Operator overloading	30.00		
	Learning Outcomes: The students should be able to: <ol style="list-style-type: none"><li>1. To implement a program using operator overloading for a given problem</li></ol>			

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	statement.			
9	Copy Constructors	30.00		
	Learning Outcomes: The students should be able to: 1. Describe copy constructor. 2. Use copy constructor to create a copy of an already existing object of a class type.			
10	Inheritance	30.00		
	Learning Outcomes: The students should be able to: 1. To create hierarchy of classes using inheritance feature of C++. 2. To implement a program using various types of inheritanc.			
11	Virtual function & Virtual class	30.00		
	Learning Outcomes: The students should be able to: 1. Implement virtual function and virtual base class for given problem statement.			
12	File handling	30.00		
	Learning Outcomes: The students should be able to: 1. Implement various operations on file using file handling functions from C++.			
13	File pointers	30.00		
	Learning Outcomes: The students should be able to: 1. Write a C++ Program of Manipulation of <i>file pointers</i> in File Handling.			



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14	Exception handling	30.00		
	Learning Outcomes: The students should be able to: 1. Implement a program to demonstrate exception handling mechanism in CPP.			
15	Template Function & class	30.00		
	Learning Outcomes: The students should be able to: 1. Demonstrate use of CPP template by implementing given problem statement.			

**Date: 07-01-2018**

**Course in-charge**

**Module Co-ordinator**

**Head of Department**