


Government of Karnataka
Department of Technical Education
Bengaluru

	Course Title: OOP with Java Lab		
	Scheme (L:T:P) : 0:2:4	Total Contact Hours: 78	Course Code: 15CS46P
	Type of Course: Tutorial and Practical's	Credit : 03	Core/ Elective: Core
CIE- 25 Marks		SEE- 50 Marks	

Prerequisites

C Programming Knowledge.

Course Objectives

Learn to write, debug, and document well-structured Java applications.

Course Outcome

On successful completion of the course, the students will be able to attain CO:

Course Outcome		Experiment linked	CL	Linked PO	Teaching Hrs
CO1	Create and use classes and Objects.	<i>1 to 7</i>	<i>U, A</i>	2,3,4,8,10	30
CO2	Demonstrate the methods of String, String Buffer, Vector and Wrapper Classes.	<i>8 to 10</i>	<i>U, A</i>	2,3,4,8,10	15
CO3	Implement interfaces and inheritance.	<i>11 to 13</i>	<i>U, A</i>	2,3,4,8,10	15
CO4	Demonstrate the use of packages.	<i>14</i>	<i>U, A</i>	2,3,4,8,10	6
CO5	Implement Multithreading concepts	<i>15</i>	<i>U, A</i>	2,3,4,8,10	6
CO6	Demonstrate programming techniques with exception handling.	<i>16</i>	<i>U, A</i>	2,3,4,8,10	6
			Total sessions		78

Legends: R = Remember U= Understand; A= Apply and above levels (Bloom's revised taxonomy)

Course-PO Attainment Matrix

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10
OOP with Java Lab	-	3	3	3	-	-	-	3	-	3

Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.

Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.

If $\geq 40\%$ of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3

If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2

If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1

If $< 5\%$ of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

LIST OF GRADED PRACTICAL EXERCISES

Sl.No	Practical/Exercise
1	Write a Java Program to sort a list of names selection sort technique.
2	Write a Java Program to define a class, describe its constructor, overload the Constructors and instantiate its object.
3	Write a Java Program to define a class, define instance methods for setting and Retrieving values of instance variables and instantiate its object.
4	Write a Java Program to define a class, define instance methods and overload them and use them for dynamic method invocation.
5	Write a Java Program to demonstrate use of sub class.
6	Write a Java Program to demonstrate use of nested class.
7	Write a Java Program to implement array of objects.
8	Write a Java program to practice - using String class and its methods. - using String Buffer class and its methods.
9	Write a Java Program to implement Vector class and its methods.
10	Write a Java Program to implement Wrapper classes and their methods.
11	Write a Java Program to implement inheritance and demonstrate use of method overriding.
12	Write a Java Program to implement multilevel inheritance by applying various access controls to its data members and methods.
13	Write a program to demonstrate - use of implementing interfaces. - use of extending interfaces.
14	Write a Java program to implement the concept of importing classes from user defined package and creating packages.
15	Write a program to implement the concept of threading. -by extending Thread Class -by implementing Runnable Interface
16	Write a program to implement the concept of Exception Handling - using predefined exception. - by creating user defined exceptions.

Reference

1. Programming with Java, 4th edition, Balagurusamy, Mc Graw Hill, ISBN-9780070141698
2. Computer Programming in Java, Junaid Khateeb and Dr. G.T. Thampi, Wiley Dreamtech, ISBN: 9788177228298

Suggested list of student activities

Note: the following activities or similar activities for assessing CIE (IA) for 5 marks (Any one)

Student activity like mini-project, surveys, quizzes, etc. should be done in group of 2-3 students.

1. Each group should do any one of the following type activity or any other similar activity related to the course and before conduction, get it approved from concerned course co-ordinator and programme co-ordinator.
2. Each group should conduct different activity and no repeating should occur.
Some of the topics for mini projects are: ♦ Hotel Management System ♦ E-Bill Board, Online insurance ♦ Online Mobile Contributor ♦ Online Restaurant ♦ Public Distribution System ♦ SECURE E-banking security ♦ Service Call Management ♦ Secure location system ♦ Standard DB Editor ♦ Flight Reservation System ♦ Job Service Provider ♦ Net Chattering ♦ Hospital Management System ♦ E – Shopping Mall, Personalized web search engine ♦ E-health Care ♦ Telecom Linkage System ♦ Multi Message communication and file sharing system in network ♦ ATM Database System ♦ Health record System using referral ♦ Online Library management ♦ Typing text recognition ♦ Online bus ticket booking ♦ Birthday reminder via Email ♦ Time table management system for college ♦ Agriculture Management System ♦ District medical data center ♦ etc.

Course Delivery

The course will be delivered through Demonstration and Practices

Course Assessment and Evaluation Scheme

Method	What		To whom	When/Where (Frequency in the course)	Max Marks	Evidence collected	Course outcomes
Direct Assessment	CIE (Continuous Internal Evaluation)	IA	Students	Two tests (average of two tests)	10	Blue books	1 to 6
				Record	10	Record	1 to 6
				Student activity	05	Report	
	Total	25					
	SEE (Semester End Examination)	End Exam		End of the course	50	Answer scripts at BTE	1 to 6
Indirect Assessment	Student Feedback on course		Students	Middle of the course		Feedback forms	1,2,3 Delivery of course
	End of Course Survey			End of the course		Questionnaires	1 to 6 Effectiveness of Delivery of instructions & Assessment Methods

*CIE – Continuous Internal Evaluation

*SEE – Semester End Examination

Note:

1. I.A. test shall be conducted as per SEE scheme of valuation. However obtained marks shall be reduced to 10 marks. Average marks of two tests shall be rounded off to the next higher digit.
2. Rubrics to be devised appropriately by the concerned faculty to assess Student activities.

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No	Bloom's Category	%
1	Remembrance	10
2	Understanding	30
3	Application	60

Note to IA verifier: The following documents to be verified by CIE verifier at the end of semester

1. Blue Book(10 marks)
2. Record (10 marks)
3. Student suggested activities report for 5 marks
4. Student feedback on course regarding Effectiveness of Delivery of instructions & Assessment Methods.

Format for Student Activity Assessment

DIMENSION	Unsatisfactory 1	Developing 2	Satisfactory 3	Good 4	Exemplary 5	Score
Collection of data	Does not collect any information relating to the topic	Collects very limited information; some relate to the topic	Collects some basic information; refer to the topic	Collects relevant information; concerned to the topic	Collects a great deal of information; all refer to the topic	3
Fulfill team's roles & duties	Does not perform any duties assigned to the team role	Performs very little duties	Performs nearly all duties	Performs all duties	Performs all duties of assigned team roles with presentation	4
Shares work equally	Always relies on others to do the work	Rarely does the assigned work; often needs reminding	Usually does the assigned work; rarely needs reminding	Does the assigned job without having to be reminded.	Always does the assigned work without having to be reminded and on given time frame	3
Listen to other Team mates	Is always talking; never allows anyone else to speak	Usually does most of the talking; rarely allows others to speak	Listens, but sometimes talk too much	Listens and contributes to the relevant topic	Listens and contributes precisely to the relevant topic and exhibit leadership qualities	3
TOTAL						13/4=3.25=4

**All student activities should be done in a group of 4-5 students with a team leader.*

Scheme of Valuation for End Examination

1	Writing two programs	10+10=20
2	Executing any one program	20
3	Viva Voice	10
Total		50

***Evaluation should be based on the screen output only. No hard copy required.*

***Change of question is allowed only once. Marks of 05 should be deducted in the given question.*

Resource requirements for OOP with Java Lab

(For an Intake of 60 Students [3 Batches])

Sl. No.	Equipment	Quantity
1	PC systems (latest configurations with speakers)	20
2	Laser Printers	01
3	Networking (Structured) with CAT 6e / wireless 24 Port switches / Wireless Router I/O Boxes for networking(as required)	03
4	Broad Band Connection	01

***Open Source Software should be encouraged*



MODEL QUESTION BANK

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