MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

COURSE PLAN

Department	:	Computer Science and Engineering
Course Name & code	:	Object Oriented Programming & CSE2104
Semester & branch	:	III Semester & Computer Science and Engineering
Name of the faculty	:	Dr. Mamatha Balachandra
No of contact hours/week:	:	

L	T	P	C
3	1	0	4

Course Outcomes (COs)

	At the end of this course, the student should be able to:	No. of Contact Hours	Marks
CO1:	Acquire knowledge of Object oriented programming along with CERT JAVA coding standard	14	28
CO2:	Achieve reusability using Inheritance and Packages	12	25
CO3:	Achieve high level reusability using Generics	4	9
CO4:	Appreciate the use of exception handling and achieve concurrency through multithreading	10	22
CO5:	Understand event handling and Design simple GUI based applications using Javafx	8	16
	Total	48	100

Assessment Plan

Components	Assignments	Sessional Tests	End Semester/ Make-up Examination
Duration	20 to 30 minutes	60 minutes	180 minutes
Weightage	20 % (4 X 5 marks)	30 % (2 X 15 Marks)	50 % (1 X 50 Marks)
Typology of Questions	Understanding/ Comprehension; Application; Analysis; Synthesis; Evaluation	Knowledge/ Recall; Understanding/ Comprehension; Application	Understanding/ Comprehension; Application; Analysis; Synthesis; Evaluation
Pattern	Answer one randomly selected question from the problem sheet (Students can refer their class notes)	MCQ: 10 questions (0.5 marks) Short Answers: 5 questions (2 marks)	Answer all 5 full questions of 10 marks each. Each question may have 2 to 3 parts of 3/4/5/6/7 marks
Schedule	4, 7, 10, and 13th week of academic calendar	Calendared activity	Calendared activity
Topics Covered	Quiz 1 (L 1-9 & T 1-3) **(CO1)** Quiz 2 (L **10-16** & T 4-5) **(CO2)** Quiz 3 (L 17-25 & T 6-8) **(CO3)** Quiz 4 (L 26-32 & T 9-11) **(CO4)**	Test 1 (L 1-16 & T 1-5) **(CO1-2)** Test 2 (L 17-32 & T 6-11) **(CO3-4)**	Comprehensive examination covering full syllabus. Students are expected to answer all questions **(CO1-5)**

Lesson Plan

L. No.	Topics	Course Outcome Addressed
L0	Introduction to Object oriented programming	CO1
L1	INTRODUCTION: The Java Language, The KeyAttributes of ObjectOrientedProgramming, The Java Development Kit, A First Simple program, Programming Basics	CO1
L2	The Java Keywords , Identifiers in Java, The Java Class Libraries, LANGUAGE BASICS: Java's Primitive Types, Literals,Variables,ScopeandLifetimeofVariables	CO1
L3	Operators and Operator Precedence, Expressions, Input, Control Structures, Arrays and Strings	CO1
T1	JAVA language basics, simple programs, operators and expressions	CO1
L4	INRODUCTION TO CLASSES, OBJECTS AND METHODS: Class Fundamentals, Creating Objects, Reference Variables and Assignment, Methods, Returning from a method	CO1
L5	Constructors, Parameterized Constructors, The new operator, Garbage Collection and Finalizers, thiskeyword, Controlling Access to Class Members	CO1
L6	Pass Objects to Methods, Arguments Passing, Returning Objects	CO1
T2	Classes andObjects, object initialization, passing objects to methods	CO1

L7	Method Overloading, Overloading Constructors, Understanding static	CO1
L8	Nested and Inner Classes,Variable Length Arguments	C01
L9	INHERITANCE :Inheritance Basics, Member Access and Inheritance	CO2
L10	Constructors and Inheritance, Use Super to Call Superclass Constructors and Access Superclass Members	CO2
T3	Superclass, constructors in subclass and superclass, accessing members of superclass	CO2
L11	Creating Multilevel Hierarchy, Order of execution of Constructors	CO2
L12	Superclass References and Subclass Objects	CO2
L13	Method Overriding and Polymorphism, Using Abstract Classes	CO2
T4	Order of execution of constructors, method overriding	CO2
L14	Using Final,The Object Class	CO2
L15	INTERFACES: Interface Fundamentals, Creating and Implementing an Interface	CO2
L16	Using Interface References, Implementing Multiple Interfaces, Constants in Interfaces, Extending Interfaces, Nested Interfaces	CO2
T5	Creating and implementing interfaces	CO2
L17	PACKAGES: Package Fundamentals, Packages and Member Access	CO2
L18	Importing Packages, Static Import	CO2
T6	Creating and importing packages	CO2
L19	EXCEPTIONHANDLING: Exception Hierarchy, Exception Handling Fundamentals, Consequences of an Uncaught Exception	CO3
L20	Handling Errors through Exceptions, Using Multiple catch Clauses, Nesting try blocks, Throwing an Exception, Closer look at Throwable class	CO3
L21	Throwing an Exception, Closer look at Throwable class	CO3
L22	Using finally, Using throws, Built-in Exceptions, Creating Exception Subclasses	CO3
T7	Handling exceptions using try, catch, throw, throws	CO3
L23	MULTITHREADED PROGRAMMING: Multithreading Fundamentals, The Thread Class and Runnable Interface	CO3
L24	Creating a Thread and Multiple Threads, Determining when a Thread Ends, Thread Priorities, Synchronization, Using Synchronized Methods	CO3
L25	The synchronized statement, Thread Communication, Suspending, Resuming and Stopping Threads	CO3
T8	Creating multiple threads, thread priorities, thread synchronization	CO3
L26	Generic fundamentals, Generic class	CO4
L27	Bounded types, using wildcard arguments	CO4

T9	Generic methods, Generic interfaces	CO4
L28	Generic constructors, Generic restrictions,	CO4
L29	Introducing Javafx Gui Programming using Javafx: Basic concepts	CO5
L30	Application Skeleton, Event handling	CO5
T10	Example program to handle events	CO5
L31	Exploring Javafx Controls: Toggle button, radio button	CO5
L32	Check box, List view	CO5
L33	Combo box, Text field	CO5
T11	Example program which uses Checkbox, Text field, List view	CO5
L34	CERT JAVA coding standard: Rules and Recommendations for Expressions, Rules and Recommendations for Numeric Types	CO5
L35	Rules and Recommendations for Characters and Strings	CO5
L36	Rules and Recommendations for Object Orientation and Methods	CO5
T12	Rules and Recommendations for Exceptional Behavior.	CO5
L/T	Click or tap here to enter text.	

References:

1.	Herbert Schildt and Dale Skrien, Java Fundamentals – A Comprehensive Introduction (1e), McGrawHill, 2015
2.	Herbert Schildt, Java The Complete Reference, (10e), Tata McGrawHill, 2017
3.	Fred Long, Dhruv Mohindra, Ebook:CERT Oracle Secure Coding Standard for Java, Addison Wesley , 2013
4.	Fred Long, Dhruv Mohindra, Ebook:Java Coding Guidelines: 75 Recommendations for Reliable and Secure Programs , Addison Wesley ,2014
5.	Bruce Eckel, Thinking in Java, 5, Prentice Hall, 2013
6.	Herbert Schield , "Java A beginner's Guide". 6th Edition, 2014
7.	Dietel and Dietel, Java How to Program, (9e), Prentice Hall India, 2012

Submitted by: DR MAMATHA BALACHANDRA

(Signature of the faculty)

Date: 27-07-2019

Approved by: DR ASHALATHA NAYAK

(Signature of HOD)

Date: 27-01-2018

FACULTY MEMBERS TEACHING THE COURSE (IF MULTIPLE SECTIONS EXIST):

FACULTY	SECTION	FACULTY	SECTION
Mr. Chidananda Acharya	A		
Ms. Suma D	B		
Dr. Mamatha Balachandra	C		
Ms. Vasundhara Acharya	D		

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