MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

COURSE PLAN

Department	:	Information & Communication Technology
Course Name & code	:	Object Oriented Programming & ICT 2155
Semester & branch	:	III SEM & B.TECH (CCE)
Name of the faculty	:	Dr. Raghavendra Achar, Mrs. Anuradha Rao

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:	Develop simple applications using JAVA primitives (data types, operators, arrays, variables)	10	20
CO2:	Understand how object oriented concepts can be implemented using JAVA	12	24
CO3:	Use inbuilt library packages of JAVA	13	30
CO4:	Develop java applications using object oriented concepts	8	16
CO5:	Write simple concurrent programs using threads	5	10
	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 1-8 & T 1-2) **(CO1&2)**	Test 1 (L 1-13 & T 1-4) **(CO 1&2)**	Comprehensive examination covering full syllabus. Students are expected to answer all questions **(CO1-5)**
	Quiz 2 (L **9-17** & T 3-5) **(CO2)**		
	Quiz 3 (L 18-26 & T 6-8) **(CO3&4)**	Test 2 (L 14-30 & T 5-9) **(CO 3&4)**	
	Quiz 4 (L 27-33 & T 9-10) **(CO5&3)**		

Lesson Plan

L. No.	Topics	Course Outcome Addressed
L0	Introduction to the course	
L1	Introduction: The birth of modern programming language C, the need for C++, Java, Importance of Java in the internet	CO2
L2	Java applets and applications, security, probability, the byte code, An overview of Java, OOP, Two paradigms, abstraction, the three OOP principles	CO2
L3	Simple types, integers, floating point types, characters, Booleans. Variables - declaring variable, dynamic initialization, the scope and life time of variables.	CO1
T1	Simple java programs based on concepts discussed in lecture1 to lecture 3	CO1
L4	Type conversion and casting, arrays-one dimensional arrays and multi-dimensional arrays	CO1
L5	Operators and control statements : Arithmetic operators, bitwise operators	CO1
L6	Relational operators, Logical operators, ternary operators, assignment operators, Operator precedence, Control statements - if, switch, break, continue	CO1
T2	Simple java programs based on concepts discussed in lecture 4 to lecture 6	CO1
L7	While, do-while, for nested loops with examples	CO1

L8	Class fundamentals, declaring objects, assigning object references variables.	CO4
L9	Introducing methods, constructors, Overloading method, Using objects as parameters, argument passing, returning objects	CO2
T3	Simple java programs based on concepts discussed in lecture 7 to lecture 9	CO2
L10	Using objects argument passing, returning objects, Recursion, Use of static and final key word	CO2
L11	Nested and inner class, Using command line arguments, Inheritance basics.	CO2
L12	Inheritance - using super, Wrapper classes, Creating multilevel, hierarchy ,Constructors call	CO2
T4	Simple java programs based on concepts discussed in lecture 10 to lecture 12	CO2
L13	Method overriding, Dynamic method dispatch, using abstract classes, Using final inheritance	CO2
L14	Packages, defining a package, using of CLASSPATH, Package example.	CO4
L15	Access protection, Importing packages, Interfaces - defining an interface, implementing interfaces	CO2
T5	Simple java programs based on concepts discussed in lecture 13 to lecture 15	CO2
L16	Applying interfaces, Variables in interface	CO2
L17	Extending interfaces.	CO4
L18	The list interface, Array list class, Vector	CO3
T6	Simple java programs based on concepts discussed in lecture 16 to lecture 18	CO3
L19	String handling : String constructors, string length	CO1
L20	Special operations, character extraction.	CO4
L21	String comparison, searching strings,modifying a string , string buffer	CO1
T7	Simple java programs based on concepts discussed in lecture 19 to lecture 21	CO1
L22	Exception handling : Fundamentals, Exception types, uncaught exception	CO3
L23	Using try and catch, multiple catch clauses	CO3
L24	Nested try statements, Throw, throws-examples	CO3
T8	Simple java programs based on concepts discussed in lecture 22 to lecture 24	CO4
L25	Java's built in exception classes	CO3
L26	Creating exception subclasses, using exception-examples	CO4
L27	Multi threaded Programming : The Java thread model, thread priorities, Thread class and runnable interface, The main thread, creating a thread	CO5
T9	Simple java programs based on concepts discussed in lecture 25 to lecture 27	CO4
L28	Creating a multiple threads, Using is Alive() and join() Synchronization	CO5

L29	Suspending, Resuming and Stopping threads	CO5
L30	Inter thread communication.	CO5
T10	Simple java programs based on concepts discussed in lecture 28 to lecture30	CO5
L31	Input/Output : Java I/O classes and interfaces, File - directories ,Using filename filter, The stream classes, the byte streams	CO3
L32	Input stream, output stream, file input stream, file output stream, BufferedReader, BufferedWriter	CO3
L33	Random access files, The character streams - Reader, Writer, FileReader, FileWriter	CO3
T11	Simple java programs based on concepts discussed in lecture 31 to lecture 33	CO3
L34	Serialization, serialiable , Object Output, Object Output Stream, Object Input, Object Input Stream.	CO4
L35	Swing fundamentals, writing swing application, swing library	CO3
L36	Layouts and controls, introduction to event handling	CO3
T12	Simple java programs based on concepts discussed in lecture 34 to lecture 36	CO3

References:

1. Herbert Schildt, Java The Complete Reference (9e), Tata McGrawHill 2014.
2. Cay S. Horstmann & Gary Cornell, Core Java Volume I – Fundamentals (9e), Prentice Hall 2013.
3. Cay S. Horstmann & Gary Cornell, Core Java Volume II – Advanced Features (9e), Prentice Hall 2013.
4.
5.
6.
7.

Submitted by: Dr. Chandrakala C B

(Signature of the faculty)

Date: 26-07-2019

Approved by: DR. BALACHANDRA

(Signature of HOD)

Date: 26-07-2019

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

FACULTY	SECTION	FACULTY	SECTION
Dr. Raghavendra Achar	CCE-B		
Mrs. Anuradha Rao	CCE-A		

****