

University of Mumbai			
Class: F.E.	Branch: All branches of FE	Semester: II	
Subject: : Computer Programming 2			
Periods per Week (each 60 min)	Lecture	04	
	Practical	02	
	Tutorial	--	
		Hours	Marks
Evaluation System	Theory	3	100
	Practical	3	25
	Oral	--	--
	Term Work	--	25
	Total	--	150

Computer Programming 2

Detailed Syllabus		Lectures/week
01	<p>Introduction to Java</p> <ul style="list-style-type: none"> • Characterising Java as an enabler of contemporary software engineering paradigms – as a platform, simple programming environment, object oriented, platform independent, safe, high-performance, java is multi-thread, dynamically linked, java is garbage collected • Saving files on windows, compiling and running • Increment and decrement operators • Print statements, Variable and data types, comments • Command line arguments • Objects, static fields, methods • Passing arguments to methods, Returning values from methods 	05
02	<p>Primitive data types in Java</p> <ul style="list-style-type: none"> • Java operators, literals, identifiers, keywords in Java • Addition of integers in Java, Multiplication and division in java • Remainder or modulus operator in Java • Operator precedence in Java, Mixing data types • Converting strings to numbers, the char data type in Java • The if, else, else-if statements in Java • While loop, for loop, do-while loop in Java • Booleans , relational operators, Relational operator precedence • Break, continue, switch statement in java • The ?: operator in Java, Logical operators in Java <p>Object Oriented Programming</p> <ul style="list-style-type: none"> • Constructing objects with new methods, invoking methods. • Implied this, member variables vs local variables • Passing arguments to methods, returning multiple values from methods, constructors. • Access protection, four levels of access protection 	15
03	<p>Array as a data structure in Java</p> <ul style="list-style-type: none"> • Declaring arrays, creating arrays, initializing arrays • System.arraycopy() • Multidimensional Arrays • Strings 	10

	<ul style="list-style-type: none"> • Vectors • Exceptions • Try-catch • The finally keyword • Catching multiple exceptions • The throws keyword, throwing exceptions 	
04	Inheritance <ul style="list-style-type: none"> • Inheritance, the superclass • Multilevel Inheritance • Final and abstract keyword • Interfaces • Implementing Interfaces • Overriding methods • Adding methods • Subclasses and polymorphism • toString() methods • Using toString() Methods • Rules for toString() Methods • Static members 	05
05	Multithread Programming <ul style="list-style-type: none"> • Creating Threads, extending the thread class • Stopping and blocking a thread • Lifecycle of a thread • Using thread methods, thread exceptions ,thread priorities • Synchronisation • The Java packages, class library • Wrapping your own packages • Naming packages • Documentation for class library • Importing classes • Package imports • Name conflicts when importing packages • The java lang pack • The hashCode() method of java.lang.Object • Java.lang.math, java.util.vector, java.lang.string, java.util.random, java.util.hashtable java.util.date, java.util.Calender 	
06	HTML <ul style="list-style-type: none"> • Attributes, URLs, links • Applet 	05

	<ul style="list-style-type: none"> • The APPLET element, naming applets • JAR archives, The OBJECT element • Passing parameters to applets • The basic applet life cycle, init(), start(), stop(), destroy() • The coordinate system, graphics objects, loading images • Code and document bases, Drawing images at actual size • Scaling images, colour, fonts 	
	<p>Recommended Books</p> <ul style="list-style-type: none"> • Computing concepts with Java 2 essentials by CAY HORSTMANN, 2nd edition, Wiley India, ISBN 81-265-0931-7 • Programming with Java A Primer, E Balagurusamy, 3rd edition, Tata Mcgraw Hill, ISBN 0-07-061713-9 	

Term work

Written Test (at least one) - 10 marks.

Attendance (practical & Theory) - 5 marks

Documentation of assignments and debugged program - 10 marks

Practical Examination: It will be based on CP-1 and CP-2 practical conduction