

GANPAT UNIVERSITY									
FACULTY OF ENGINEERING & TECHNOLOGY									
Programme	Bachelor of Technology					Branch/Spec.	Computer Science & Engineering (CBA/CS/BDA)		
Semester	III					Version	1.0.1.1		
Effective from Academic Year					2021-22	Effective for the batch Admitted in			June 2020
Subject code	2CSE303				Subject Name	Object Oriented Programming			
Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)	Practical(Lab.)			Total		CE	SEE	Total
	L	TU	P	TW					
Credit	3	0	2	0	5	Theory	40	60	100
Hours	3	0	4	0	7	Practical	60	40	100
Pre-requisites:									
Student must know C and fundamental of Object oriented programming									
Learning Outcome:									
<ul style="list-style-type: none"> Understand Java Programming Language Design, implement, test, debug, and document GUI, event-driven programs. Design, implement, test, debug, and document in object-oriented programming language. Understand JSP and Servlet Technology 									
Theory syllabus									
Unit	Content								Hrs
1	Object Oriented Concepts Introduction to OOP Concepts: Objects, Class ,Elements of OOP : Inheritance , Encapsulation , Association , Abstraction , Polymorphism								2
2	Java Language and operators Data types, variables and operators: data type, type casting, variable, operators, scanner class, implementation scanner class Programming Constructs : what are programming constructs, if statements, implementation ternary operator, case statements, implementation switch case, looping Arrays : Arrays , implement single dimensional array, single dimensional array using integer, multidimensional array								3
3	Creating Classes and Objects Classes and Objects : implementations classes , class declaration , class modifiers Methods : methods , returning from methods, invoking methods , constructors, default constructor, implement constructors Overloading : Method overloading, Implement overloading static methods, Constructor Overloading Static members and Initialization Blocks: Static Class members, Implement static variable, Static Methods, Instance Initialization Block, Implement garbage collection, Packages, Class visibility, Access Levels, Implement package and import								4
4	Useful JAVA API Classes Working with strings: String Class, StringBuilder Class, StringBuffer, Implement StringBuffer Working with Date and Time: Using Date class, Implement Date, SimpleDateFormat, Calendar Class Objects of primitives: Wrapper Classes, Implement Autoboxing, Unboxing								4
5	Exceptions Introduction: Features, Checked and unchecked exception, Java Approach to handle exceptions, Exception Hierarchy, Implement Exception, The Throw Keyword, Implement Checked Exception, Implement Unchecked Exception, Implement Custom Exception								4

6	File Handling Getting information about files and folders: File Class in JAVA File Class to Create Files and Directories: Create New File Overview of streams API in JAVA: I/O Streams in JAVA, Character Streams, Implement Buffered OutputStream, Reading from Console, Implement Scanner Serialization: Storing objects via serialization Metadata and File attributes: Metadata and File attributes Basic File Attribute: Basic File Attribute File Visitor Interface: File Visitor Interface, Random Access File	5
7	MultiThreading Overview of Multithreading: Overview of Multithreading, Creating Threads Extending the thread class: Implement Thread, Implement the runnable interface Synchronization: Synchronization, Implement synchronize, Synchronization Issues, Race Condition, Interthread communication	4
8	Collection Framework Generics: Collections, Bounded types Overview of collection framework: Need for collection framework in java, Vector and stack, Stack Iterators: Iterable and Iterator, Iterators, Using iterators in Java Utility Class: Collections utility class Arrays utility class: Arrays utility class, Java Arrays Sort Set: The Set interface and common implementations, Implement ArrayList, Implementations Queue: Queue, General-Purpose Queue Implementations Legacy Collections: Hashtable and Properties, Reading from properties file using Properties class, Comparator	7
9	Lambda Expressions Basic of lambda expression: What is lambda expression ?, Need for Lambda Expression, Type Inference	3
10	JDBC Overview of JDBC API :Overview of JDBC API, Types of driver JDBC interface and classes for connecting and retrieving data JDBC interface and classes for connecting and retrieving data, Implement JDBC Type of Statement: Type of Statement, Creating and closing a PreparedStatement, Creating and closing a CallableStatement, Commonly used Methods of ResultSet: Batch Processing: What is Batch Processing, Transaction Management, Transaction Rollback RowSet and RowSet Types :RowSet and RowSet, Implement CallableStatement	6
Practical content		
<p>The practical based on syllabus contents should be properly designed and performed on code block and eclipse. Implement with an attempt to develop different types of practical skills so that students are able to acquire the competencies.</p> <ul style="list-style-type: none"> ● Learning concept of class and use of print method ● To learn usage of various data types and variables ● To learn classes, objects and methods ● To learn Constructor and Method Overloading ● To perform programs based on Array and String ● To perform programs based on ArrayList and Vector ● To perform programs based on Inheritance ● To develop some java applications ● To perform programs based on interface and inheritance ● To perform programs based on Exception Handling 		
	Mooc Course	
	Course Name: Programming In Java	

	Link: https://swayam.gov.in/nd1_noc19_cs84/preview Courses Name: Fundamental of Java (IBM skills Network) Link: https://guni.skillsnetwork.site/courses/course-v1:IBMCEP+CEJAVA1IN+v1
Text Books	
1	Thinking in Java by Bruce Eckel, Pearson Publication
2	Java Complete Reference Java By Herbet Shield, McGraw Hill.
Reference Books	
1	Programming in Java2 By Dr. K. Somasundaram, Jaico Books
2	Programming with Java – A primer By Balaguruswamy, McGraw Hill