GANPAT UNIVERSITY									
FACULTY OF TECHNOLOGY									
Programme	Bachelor of Technology					Branch/Spec.	Computer Science & Engineering (CBA/BDA/MA)		
Semester	III					Version	1.0.1.0		
Effective from Academic Year			2018-19			Effective for the batch Admitted in			June 2017
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:

- 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
- Web development and deployment

Theory syllabus

Unit	Content	Hrs
1	**Introduction** Object Oriented Programming Concepts (Encapsulation, Inheritance & Polymorphism), Features of JAVA Language, Types of JAVA Programs, JAVA Architecture	2
2	**Literals, Data Types And Variables** Literals (Integer Literals, Floating Point Literals, Character Literals, String Literals, Boolean Literals), Data Types (Integer Types, Floating Point Types, Character Type, Boolean Type), Variables	2
3	**The Structure of a Java Program** Structure of a Java Program, Comments, Expressions and Statements, Type Conversion, Block Statements and Scope	2
4	**Operators** Arithmetic Operators, Bitwise Operators, Relational Operators, Boolean Logical Operators, Ternary Operator, Operator Precedence	3
5	**Control Statements** The if...else Statement, The switch Statement, The while Statement, The do...while Statement, The for...Statement, The break Statement, The continue Statement, The comma Statement	3
6	**Arrays** One-Dimensional Array, Multi-Dimensional Array	2
7	**Classes** Defining a Class, The new Operator and Objects, The dot operator, Method Declaration and Calling, Constructors, Instance Variable Hiding, this in Constructor, Method Overloading, Passing Objects as Parameters to Methods	3

8	**Inheritance** Creating Subclasses, Method Overriding, Final Class, Final Variables, Object Destruction and Garbage Collection, Recursion, Static Methods, Block and Variables (Static Class, Static Variables, Static Block), Abstract Classes	3
9	**Packages and Interfaces** Package, The import Statement, Access Modifier, Interfaces (Defining Interfaces, Implementing an Interface)	3
10	**Wrapper Classes** The Number Class (Byte Class, Short Class, Integer Class, Long Class, Float Class, Double Class), The Character Class, The Boolean Class	2
11	**Exceptions** Type of Exceptions, Catching Exceptions (Nested try Blocks, Hierarchy of Multiple Catch Blocks), Rethrowing Exceptions, Creating Your Own Exceptions, Broadcasting that a Method Throws Exception, The finally Block, Checked and Unchecked Exceptions	3
12	**Input And Output Classes** I/O Streams, The File Class, Byte Stream (InputStream, OutputStream), Disk File Handling (FileInputStream, FileOutputStream), Memory Handling (ByteArrayInputStream, ByteArrayOutputStream), Filtered Byte Streams (BufferedInputStream, BufferedOutputStream, DataInputStream, DataOutputStream), SequenceInputStream, ObjectOutputStream, ObjectInputStream, Random Access File, Character Stream(CharArrayReader, CharArrayWriter, InputStreamReader, Output StreamWriter, FileWriter, FileReader, BufferedReader, BufferedWriter)	3
13	**Strings** The String Class(Equality Operator and equals Method, String Concatenation with +), The StringBuffer Class	2
14	**Applets** Applet Basics, Methods of Building an Applet, Some General Methods of Applet, Displaying Text in Status Bar, Embedding Applet Information, The HTML Applet Tag, Reading Parameters into Applets, Colors in Applet, Getting Documentbase and Codebase, Interfaces in Applet, Multimedia in Applet (Playing Audio Clips, Images in Applet, Applet Showing Other HTML Pages)	4
15	**Event Handling** Delegation Event Model, Events (The ActionEvent Class, The AdjustmentEvent Class, The ComponentEvent Class, The ItemEvent Class, The KeyEvent Class, The MouseEvent Class, The TextEvent Class, The WindowEvent Class), Event Listeners, Registering Listners with Source, Adapter Classes	4
16	**Introduction to Advanced JAVA Technologies** Introduction to Servlets, Servlets API, JSP, JSP Specification and Syntax, JSP Expression Language, JSP Tag files- Custom Tags, Beans, Http: Session Management, Cookie API, RMI, Web Component, Debugging Web Applications, Web Archive Development Descriptor, Web Application Security, JDBC, Java EE Packaging and deployment	4
Practical content		
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. • 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 Array List 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: Link:

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