

<b>OBJECT ORIENTED CONCEPTS</b> <b>[As per Choice Based Credit System (CBCS) scheme]</b> <b>(Effective from the academic year 2017 -2018)</b> <b>SEMESTER – IV</b>			
Subject Code	17CS42	IA Marks	40
Number of Lecture Hours/Week	03	Exam Marks	60
Total Number of Lecture Hours	40	Exam Hours	03
CREDITS – 03			
Module 1			Teaching Hours
<b>Introduction to Object Oriented Concepts:</b> A Review of structures, Procedure–Oriented Programming system, Object Oriented Programming System, Comparison of Object Oriented Language with C, Console I/O, variables and reference variables, Function Prototyping, Function Overloading. <b>Class and Objects:</b> Introduction, member functions and data, objects and functions, objects and arrays, Namespaces, Nested classes, Constructors, Destructors. <b>Text book 1: Ch 1: 1.1 to 1.9 Ch 2: 2.1 to 2.6 Ch 4: 4.1 to 4.2</b>			08 Hours
Module 2			
<b>Introduction to Java:</b> Java’s magic: the Byte code; Java Development Kit (JDK); the Java Buzzwords, Object-oriented programming; Simple Java programs. Data types, variables and arrays, Operators, Control Statements. <b>Text book 2: Ch:1 Ch: 2 Ch:3 Ch:4 Ch:5</b>			08 Hours
Module 3			
<b>Classes, Inheritance, Exceptions, Packages and Interfaces:</b> Classes: Classes fundamentals; Declaring objects; Constructors, this keyword, garbage collection. <b>Inheritance:</b> inheritance basics, using super, creating multi level hierarchy, method overriding. <b>Exception handling:</b> Exception handling in Java. Packages, Access Protection, Importing Packages, Interfaces. <b>Text book 2: Ch:6 Ch: 8 Ch:9 Ch:10</b>			08 Hours
Module 4			
<b>Multi Threaded Programming, Event Handling:</b> Multi Threaded Programming: What are threads? How to make the classes threadable ; Extending threads; Implementing runnable; Synchronization; Changing state of the thread; Bounded buffer problems, read-write problem, producer consumer problems. <b>Event Handling:</b> Two event handling mechanisms; The delegation event model; Event classes; Sources of events; Event listener interfaces; Using the delegation event model; Adapter classes; Inner classes. <b>Text book 2: Ch 11: Ch: 22</b>			08 Hours
Module 5			
<b>The Applet Class:</b> Introduction, Two types of Applets; Applet basics; Applet Architecture; An Applet skeleton; Simple Applet display methods; Requesting repainting; Using the Status Window; The HTML APPLET tag; Passing parameters to Applets; getDocumentbase() and getCodebase(); ApletContext and showDocument(); The AudioClip Interface; The AppletStub Interface;Output to the Console. <b>Swings:</b> Swings: The origins of Swing; Two key Swing features; Components and Containers; The Swing Packages; A simple Swing Application; Create a Swing Applet; JLabel and ImageIcon; JTextField;The Swing Buttons; JTabbedPane; JScrollPane; JList; JComboBox; JTable. <b>Text book 2: Ch 21: Ch: 29 Ch: 30</b>			08 Hours

<b>Course Outcomes:</b> After studying this course, students will be able to
<ul style="list-style-type: none"> <li>• Explain the object-oriented concepts and JAVA.</li> <li>• Develop computer programs to solve real world problems in Java.</li> <li>• Develop simple GUI interfaces for a computer program to interact with users, and to <b>comprehend</b> the event-based GUI handling principles using Applets and swings.</li> </ul>
<b>Question paper pattern:</b>
<p>The question paper will have ten questions.  There will be 2 questions from each module.  Each question will have questions covering all the topics under a module.  The students will have to answer 5 full questions, selecting one full question from each module.</p>
<b>Text Books:</b>
<ol style="list-style-type: none"> <li>1. Sourav Sahay, Object Oriented Programming with C++ , 2<sup>nd</sup> Ed, Oxford University Press,2006 (Chapters 1, 2, 4)</li> <li>2. Herbert Schildt, Java The Complete Reference, 7th Edition, Tata McGraw Hill, 2007. (Chapters 1, 2, 3, 4, 5, 6, 8, 9,10, 11, 21, 22, 29, 30)</li> </ol>
<b>Reference Book:</b>
<ol style="list-style-type: none"> <li>1. Mahesh Bhawe and Sunil Patekar, "Programming with Java", First Edition, Pearson Education,2008, ISBN:9788131720806</li> <li>2. Herbert Schildt, The Complete Reference C++, 4th Edition, Tata McGraw Hill, 2003.</li> <li>3. Stanley B.Lippmann, Josee Lajore, C++ Primer, 4th Edition, Pearson Education, 2005.</li> <li>4. Rajkumar Buyya,S Thamarasi selvi, xingchen chu, Object oriented Programming with java, Tata McGraw Hill education private limited.</li> <li>5. Richard A Johnson, Introduction to Java Programming and OOAD, CENGAGE Learning.</li> <li>6. E Balagurusamy, Programming with Java A primer, Tata McGraw Hill companies.</li> </ol>
<b>Note: Every institute shall organize a bridge organize on C++ either in the vacation or in the beginning of even semester.</b>