OBJECT ORIENTED CONCEPTS
[As per Choice Based Credit System (CBCS) scheme]
(Effective from the academic year 2017 -2018)
SEMESTER – IV

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
Introduction to Object Oriented Concepts: 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. **Class and Objects:** Introduction, member functions and data, objects and functions, objects and arrays, Namespaces, Nested classes, Constructors, Destructors. Text book 1: Ch 1: 1.1 to 1.9 Ch 2: 2.1 to 2.6 Ch 4: 4.1 to 4.2	08 Hours

Module 2	
Introduction to Java: 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. Text book 2: Ch:1 Ch: 2 Ch:3 Ch:4 Ch:5	08 Hours

Module 3	
Classes, Inheritance, Exceptions, Packages and Interfaces: Classes: Classes fundamentals; Declaring objects; Constructors, this keyword, garbage collection. **Inheritance:** inheritance basics, using super, creating multi level hierarchy, method overriding. **Exception handling:** Exception handling in Java. Packages, Access Protection, Importing Packages, Interfaces. Text book 2: Ch:6 Ch: 8 Ch:9 Ch:10	08 Hours

Module 4	
Multi Threaded Programming, Event Handling: 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. **Event Handling:** 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. Text book 2: Ch 11: Ch: 22	08 Hours

Module 5	
The Applet Class: 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. **Swings:** 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. Text book 2: Ch 21: Ch: 29 Ch: 30	08 Hours

Course Outcomes: After studying this course, students will be able to
• Explain the object-oriented concepts and JAVA.   • Develop computer programs to solve real world problems in Java.   • Develop simple GUI int erfaces for a computer program to interact with users, and to **comprehend** the event-based GUI handling principles using Applets and swings.
Question paper pattern:
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.
Text Books:

1. Sourav Sahay, Object Oriented Programming with C++ , 2nd Ed, Oxford University Press,2006
    (Chapters 1, 2, 4)
 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)

Reference Book:
1. Mahesh Bhave and Sunil Patekar, "Programming with Java", First Edition, Pearson Education,2008, ISBN:9788131720806   2. Herbert Schildt, The Complete Reference C++, 4th Edition, Tata McGraw Hill, 2003.   3. Stanley B.Lippmann, Josee Lajore, C++ Primer, 4th Edition, Pearson Education, 2005.   4. Rajkumar Buyya,S Thamarasi selvi, xingchen chu, Object oriented Programming with java, Tata McGraw Hill education private limited.   5. Richard A Johnson, Introduction to Java Programming and OOAD, CENGAGE Learning.   6. E Balagurusamy, Programming with Java A primer, Tata McGraw Hill companies.
Note: Every institute shall organize a bridge organize on C++ either in the vacation or in the beginning of even semester.

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