JAVA PROGRAMMING

V Semester: ECE

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
ACSB41	Core	3	-	-	3	30	70	100
Contact Classes: 45	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes: 45		

OBJECTIVES:

The course should enable the students to:

I. The basic concepts and techniques which form the object oriented paradigm using java language.
II. The object oriented features to develop the robust applications using java platform.
III. The multi threading, platform independent and Graphical User Interface features to develop the applications for business problems.

MODULE -I	FUNDAMENTALS OF OBJECT ORIENTED PROGRAMMING:	Classes: 10

Object oriented paradigm - Basic concepts of Object Oriented Programming - Benefits of OOP - Applications of OOP

Java Evolution: Java Features - How Java differs from C and C++ - Java and Internet - Java and World Wide Web - Web Browsers - Hardware and Software Requirements - Java Environment. Overview of Java Language: Simple Java Program - Java Program Structure - Java Tokens- Java Statements - Implementing a Java Program - Java Virtual Machine - Constants - Variables - Data types - Scope of Variables-Symbolic Constants-Type Casting and type promotions – Operators, Operator Precedence and Associativity - Control Statements – break - continue- Arrays-Multi dimensional arrays, Wrapper Classes -Simple examples.

MODULE -II	CLASSES AND OBJECTS:	Classes: 09

Classes and Objects - Constructors – methods - this keyword – garbage collection- finalize - Overloading methods and constructors - Access Control- Static members – nested and inner classes – command line arguments - variable length arguments.

Inheritance: Forms of inheritance – specialization, specification, construction, extension, limitation, combination, benefits and costs of inheritance. Super uses- final - polymorphism, method overriding - dynamic method dispatch –abstract classes – exploring String class.

MODULE -III	PACKAGES AND INTERFACES:	Classes: 08

Defining and accessing a package – understanding CLASSPATH – access protection importing packages – Interfaces - Defining and implementing an interface, Applying interfaces, Variables in interfaces and extended interfaces. Exploring java.lang and java.util packages.

Exception Handling-Fundamentals, usage of try, catch, multiple catch clauses, throw, throws and finally. Java Built in Exceptions and creating own exception subclasses.

MODULE -IV	MULTITHREADED PROGRAMMING:	Classes: 08

Java Thread life cycle model – Thread creation - Thread Exceptions - Thread Priority – Synchronization - Messaging - Runnable Interface - Interthread Communication - Deadlock - Suspending, Resuming and stopping threads.

I/O Streams: File – Streams – Advantages - The stream classes – Byte streams – Character streams.

MODULE -V	APPLET PROGRAMMING:	Classes: 10

How Applets differ from Applications - Applet Life Cycle - Creating an Applet - Running the Applet- Designing a Webpage - Applet Tag - Adding Applet to HTML file - More about Applet Tag - Passing parameters to Applets - Aligning the display.
Event handling: basics of event handling, Event classes, Event Listeners, delegation event model, handlingmouseandkeyboardevents,adapterclasses,AWTClasshierarchy-AWTControls-Layout Managers and Menus, limitations of AWT.

Text Books:

1. Herbert Schildt, "The Complete Reference Java J2SE", TMH Publishing Company Ltd, New Delhi, 5th Edition,2008.
2. Cay Horstmann, "Big Java", John Wiley and Sons, 2nd Edition,2006.

Reference Books:

1. Java How to Program, Sixth Edition, H.M.Dietel and P.J.Dietel, PearsonEducation/PHI
2. Core Java 2, Vol 1, Fundamentals, Cay.S.Horstmann and Gary Cornell, Seventh Edition, Pearson Education.
3. Core Java 2, Vol2, Advanced Features, Cay.S.Horstmann and Gary Cornell, Seventh Edition, PearsonEducation.

Web References:

1. http://www.javatpoint.com/java-tutorial
2. http://www.javatutorialpoint.com/introduction-to-java/

E-Text Books:

1.http://bookboon.com/en/java-programming-language-ebooks
2.https://en.wikibooks.org/wiki/Java_Programming