

# FUTURE VISION BIE

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Future Vision

By K B Hemanth Raj

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<b>OBJECT ORIENTED CONCEPTS</b> <b>(Effective from the academic year 2018 -2019)</b> <b>SEMESTER – IV</b>			
<b>Course Code</b>	<b>18CS45</b>	<b>CIE Marks</b>	40
<b>Number of Contact Hours/Week</b>	3:0:0	<b>SEE Marks</b>	60
<b>Total Number of Contact Hours</b>	40	<b>Exam Hours</b>	03
<b>CREDITS –3</b>			
<b>Course Learning Objectives:</b> This course (18CS45) will enable students to: <ul style="list-style-type: none"> <li>• Learn fundamental features of object oriented language and JAVA</li> <li>• Set up Java JDK environment to create, debug and run simple Java programs.</li> <li>• Create multi-threaded programs and event handling mechanisms.</li> <li>• Introduce event driven Graphical User Interface (GUI) programming using applets and swings.</li> </ul>			
<b>Module 1</b>			<b>Contact Hours</b>
<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. <b>Text book 1: Ch 1: 1.1 to 1.9 Ch 2: 2.1 to 2.3</b> <b>RBT: L1, L2</b>			08
<b>Module 2</b>			
<b>Class and Objects (contd):</b> Objects and arrays, Namespaces, Nested classes, Constructors, Destructors. <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 1: Ch 2: 2.4 to 2.6 Ch 4: 4.1 to 4.2</b> <b>Text book 2: Ch:1 Ch: 2 Ch:3 Ch:4 Ch:5</b> <b>RBT: L1, L2</b>			08
<b>Module 3</b>			
<b>Classes, Inheritance, Exception Handling:</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. <b>Text book 2: Ch:6 Ch: 8 Ch:10</b> <b>RBT: L1, L2, L3</b>			08
<b>Module 4</b>			
<b>Packages and Interfaces:</b> Packages, Access Protection, Importing Packages. Interfaces. <b>Multi Threaded Programming:</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, producer consumer problems. <b>Text book 2: CH: 9 Ch 11:</b> <b>RBT: L1, L2, L3</b>			08
<b>Module 5</b>			
<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.			08

<p><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.</p> <p><b>Text book 2: Ch 22: Ch: 29 Ch: 30</b></p> <p><b>RBT: L1, L2, L3</b></p>	
<p><b>Course Outcomes:</b> The student will be able to :</p> <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 understand the event-based GUI handling principles using swings.</li> </ul>	
<p><b>Question Paper Pattern:</b></p> <ul style="list-style-type: none"> <li>• The question paper will have ten questions.</li> <li>• Each full Question consisting of 20 marks</li> <li>• There will be 2 full questions (with a maximum of four sub questions) from each module.</li> <li>• Each full question will have sub questions covering all the topics under a module.</li> <li>• The students will have to answer 5 full questions, selecting one full question from each module.</li> </ul>	
<p><b>Textbooks:</b></p> <ol style="list-style-type: none"> <li>1. Sourav Sahay, Object Oriented Programming with C++ , 2nd Ed, Oxford University Press,2006</li> <li>2. Herbert Schildt, Java The Complete Reference, 7th Edition, Tata McGraw Hill, 2007.</li> </ol>	
<p><b>Reference Books:</b></p> <ol style="list-style-type: none"> <li>1. Mahesh Bhavne 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>	
<p><b>Mandatory Note: Every institute shall organize bridge course on C++, either in the vacation or in the beginning of even semester for a minimum period of ten days (2hrs/day). Maintain a copy of the report for verification during LIC visit.</b></p>	
<p><b>Faculty can utilize open source tools to make teaching and learning more interactive.</b></p>	