**KGiSL Institute of Technology**

**Department of Information Technology**

**Lesson plan (Micro level)**

Faculty Name : Mr. S. Rajasekaran Designation : Assistant Professor

Subject Name : Object Oriented Programming Subject Code :IT6601 (C204)

Academic Year : 2019-2020 Sem/Year : III/II

**COURSE OUTCOMES**

Upon completion of the course, the student should be able to:

C204.1: Develop Java programs using OOP principles

C204.2: Develop Java programs with the concepts inheritance and interfaces

C204.3: Build Java applications using exceptions and I/O streams

C204.4: Develop Java applications with threads and generics classes

C204.5: Develop interactive Java programs using swings

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **UNIT I**  **INTRODUCTION TO OOP AND JAVA FUNDAMENTALS** | | | | | | | | | |
| **Topics** | | Planned Date | Mode of Teaching | | Reference | Course Outcome | Actual  Date | Day Order /Hour | Remarks |
| 1 | Object Oriented Programming | 17/06/19 | PPT | | T1,R3 | C204.1 |  |  |  |
| 2 | Abstraction – objects and classes - Encapsulation- Inheritance | 17/06/19 | PPT | | T1, R3 | C204.1 |  |  |  |
| 3 | Polymorphism- OOP in Java | 19/06/19 | PPT | | T1, R3 | C204.1 |  |  |  |
| 4 | Characteristics of Java – The Java Environment | 20/06/19 | PPT | | T1, R3 | C204.1 |  |  |  |
| 5 | Java Source File -Structure – Compilation. Fundamental Programming Structures in Java | 21/06/19 | PPT | | T1, R3 | C204.1 |  |  |  |
| 6 | Defining classes in Java | 24/06/19 | PPT | | T1, R3 | C204.1 |  |  |  |
| 7 | Constructors, Methods, Access specifiers | 25/06/19 | PPT | | T1, R3 | C204.1 |  |  |  |
| 8 | Static members, Comments, Data Types | 25/06/19 | PPT | | T1, R3 | C204.1 |  |  |  |
| 9 | Variables, Operators, Control Flow | 27/06/19 | PPT | | T1, R3 | C204.1 |  |  |  |
| 10 | Arrays, Packages - JavaDoc comments. | 28/06/19 | PPT | |  |  |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 10 | | | |
| Total No. of Hours Required as per Lesson Plan | | | | | | **10** | | | |
| Signature of Faculty | | | | Signature of HOD | | | | | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **UNIT II**  **INHERITANCE AND INTERFACES** | | | | | | | | | |
| **Topics** | | Planned Date | Mode of Teaching | | Reference | Course Outcome | Actual  Date | Day Order /Hour | Remarks |
| 1 | Inheritance – Super classes- sub classes | 29/06/19 | PPT | | T1,R3 | C204.2 |  |  |  |
| 2 | Protected members – constructors in sub classes- | 01/07/19 | PPT | | T1,R3 | C204.2 |  |  |  |
| 3 | Object class – abstract classes and methods | 02/07/19 | PPT | | T1,R3 | C204.2 |  |  |  |
| 4 | final methods and classes | 02/07/19 | PPT | | T1,R3 | C204.2 |  |  |  |
| 5 | Interfaces – defining an interface, implementing interface | 04/07/19 | PPT | | T1,R3 | C204.2 |  |  |  |
| 6 | differences between classes and interfaces and extending interfaces | 05/07/19 | PPT | | T1,R3 | C204.2 |  |  |  |
| 7 | Object cloning -inner classes | 08/07/19 | VC | | T1,R3 | C204.2 |  |  |  |
| 8 | ArrayLists | 09/07/19 | PPT | | T1,R3 | C204.2 |  |  |  |
| 9 | Strings | 10/07/19 |  | |  |  |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 9 | | | |
| Total No. of Hours Required as per Lesson Plan | | | | | | **9** | | | |
| Signature of Faculty | | | | Signature of HOD | | | | | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **UNIT III**  **EXCEPTION HANDLING AND I/O** | | | | | | | | | |
| **Topics** | | Planned Date | | Mode of Teaching | Reference | Course Outcome | Actual  Date | Day Order /Hour | Remarks |
| 1 | Exceptions - exception hierarchy | 10/07/19 | | PPT | T1,R1 | C204.3 |  |  |  |
| 2 | throwing and catching exceptions | 12/07/19 | | PPT | T1,R1 | C204.3 |  |  |  |
| 3 | Built-in exceptions | 13/07/19 | | PPT | T1,R1 | C204.3 |  |  |  |
| 4 | Creating own exceptions | 15/07/19 | | PPT | T1,R1 | C204.3 |  |  |  |
| 5 | Stack Trace Elements | 16/07/19 | | PPT | T1,R1 | C204.3 |  |  |  |
| 6 | Input / Output Basics – Streams | 17/07/19 | | PPT | T1,R1 | C204.3 |  |  |  |
| 7 | Byte streams and Character streams | 17/07/19 | | PPT | T1,R1 | C204.3 |  |  |  |
| 8 | Reading and Writing Console | 19/07/19 | | PPT | T1,R1 | C204.3 |  |  |  |
| 9 | Reading and Writing Files | 20/07/19 | | PPT | T1,R1 | C204.3 |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 9 | | | |
| Total No. of Hours Required as per Lesson Plan | | | | | | **9** | | | |
| Signature of Faculty | | | Signature of HOD | | | | | | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **UNIT IV**  **MULTITHREADING AND GENERIC PROGRAMMING** | | | | | | | | | |
| **Topics** | | Planned Date | | Mode of Teaching | Reference | Course Outcome | Actual  Date | Day Order /Hour | Remarks |
| 1 | Differences between multi-threading and multitasking | 22/07/19 | | PPT | T1,R5 | C204.4 |  |  |  |
| 2 | Thread life cycle, creating threads | 23/07/19 | | PPT | T1,R5 | C204.4 |  |  |  |
| 3 | Synchronizing threads | 24/07/19 | | PPT | T1,R5 | C204.4 |  |  |  |
| 4 | Inter-thread communication | 24/07/19 | | PPT | T1,R5 | C204.4 |  |  |  |
| 5 | Daemon threads, thread groups | 26/07/19 | | PPT | T1,R5 | C204.4 |  |  |  |
| 6 | Generic Programming – Generic classes | 29/07/19 | | PPT | T1,R5 | C204.4 |  |  |  |
| 7 | Generic methods | 30/07/19 | | PPT | T1,R5 | C204.4 |  |  |  |
| 8 | Bounded Types, Restrictions and Limitations | 31/07/19 | | PPT | T1,R5 | C204.4 |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 8 | | | |
| Total No. of Hours Required as per Lesson Plan | | | | | | **8** | | | |
| Signature of Faculty | | | Signature of HOD | | | | | | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **UNIT V**  **EVENT DRIVEN PROGRAMMING** | | | | | | | | | |
| **Topics** | | Planned Date | | Mode of Teaching | Reference | Course Outcome | Actual  Date | Day Order /Hour | Remarks |
| 1 | Graphics programming - Frame | 01/08/19 | | PPT | T1 | C204.5 |  |  |  |
| 2 | Components - working with 2D shapes | 01/08/19 | | PPT | T1 | C204.5 |  |  |  |
| 3 | Using color, fonts, and images |  | | PPT | T1 | C204.5 |  |  |  |
| 4 | Basics of event handling - event handlers |  | | PPT | T1,W1 | C204.5 |  |  |  |
| 5 | Adapter classes - actions - mouse events |  | | PPT | T1 | C204.5 |  |  |  |
| 6 | AWT event hierarchy |  | | PPT | T1 | C204.5 |  |  |  |
| 7 | Introduction to Swing – layout management - Swing Components |  | | PPT | T1 | C204.5 |  |  |  |
| 8 | Text Fields , Text Areas – Buttons- Check Boxes |  | | PPT | T1 | C204.5 |  |  |  |
| 9 | Radio Buttons – Lists- choices- Scrollbars, Windows –Menus– Dialog Boxes. |  | | PPT |  | C204.5 |  |  |  |
| 10 | Window Builder Tool Kit for Swing |  | | Demo |  | C204.5 |  |  |  |
| 11 | GUI program using Multi Threading |  | | Demo |  | C204.5 |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 9 | | | |
| Total No. of Hours Required as per Lesson Plan | | | | | | **11** | | | |
| Signature of Faculty | | | Signature of HOD | | | | | | |
|  | | | | | | | | | |
| |  |  |  |  | | --- | --- | --- | --- | | **Total No. of Hours prescribed by Anna University for Completion of the Course** | | | **45** | | **Total No. of Hours Required as per Lesson Plan to complete the Course** | | | **47** | | No. of Hours Required for covering Content Beyond Syllabus | | | **2** | | **Total No. of Lecture Hours for Completion of the Course** | | | **47** | |  | | | | | **Prepared by** | Name : Mr. S. Rajasekaran  Designation : Assistant Professor | Sign | | | **Approved by** | Name : Dr.G.Vijaya  Designation : Professor & Head | Sign | |   **TEXT BOOKS:**  T1. Herbert Schildt, ―Java The complete reference‖, 8th Edition, McGraw Hill Education, 2011.  T2. Cay S. Horstmann, Gary cornell, ―Core Java Volume –I Fundamentals‖, 9th Edition, Prentice Hall, 2013. | | | | | | | | | |
| **REFERENCE BOOKS:**  R1. Paul Deitel, Harvey Deitel, ―Java SE 8 for programmers‖, 3rd Edition, Pearson, 2015.  R2. Steven Holzner, ―Java 2 Black book‖, Dreamtech press, 2011.  R3. Timothy Budd, ―Understanding Object-oriented programming with Java‖, Updated Edition, Pearson Education, 2000. | | | | | | | | | |
| **WEB REFERENCES:**  W1. <https://docs.oracle.com/javase/7/docs/api/>  W2. <https://www.tutorialspoint.com/>  W3. <https://www.javatpoint.com/> | | | | | | | | | |
| **MODE OF TEACHING:**  **C&B**- Chalk & Board  **PPT-**Power Point Presentation  **VC**-Video clipping | | | | | | | | | |
| **CONTENT BEYOND SYLLABUS (CBS)**  1. Window Builder Toolkit for Swing  2. GUI Program that deals with multi threading concepts | | | | | | | | | |

**Faculty HOD Principal**