**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 : 19-2020 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

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| **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 | 10-06-19 | PPT | | T2,W2 | C204.1 |  |  |  |
| 2 | Abstraction – objects and classes / Encapsulation/ Inheritance | 12-06-19 | PPT | | T2,W2 | C204.1 |  |  |  |
| 3 | Polymorphism/ OOP in Java | 13-06-19 | PPT | | T2,W2 | C204.1 |  |  |  |
| 4 | Characteristics of Java – The Java Environment | 14-06-19 | PPT | | T2,W2 | C204.1 |  |  |  |
| 5 | Java Source File /Structure – Compilation. Fundamental Programming Structures in Java | 15-06-19 | PPT | | T2,W2 | C204.1 |  |  |  |
| 6 | Defining classes in Java | 17-06-19 | PPT | | T2,W2 | C204.1 |  |  |  |
| 7 | Constructors, Methods, Access specifiers | 17-06-19 | PPT | | T2,W2 | C204.1 |  |  |  |
| 8 | Static members, Comments, Data Types | 19-06-19 | PPT | | T2,W2 | C204.1 |  |  |  |
| 9 | Variables, Operators, Control Flow | 20-06-19 | PPT | | T2,W2 | C204.1 |  |  |  |
| 10 | Arrays, Packages / JavaDoc comments. | 21-06-19 | PPT | | T2,W2 | C204.1 |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 10 | | | |
| Total No. of Hours Required as per Lesson Plan | | | | | | **10** | | | |
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| **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 | 24-06-19 | PPT | | T1,W3 | C204.2 |  |  |  |
| 2 | Protected members – constructors in sub classes/ | 25-06-19 | PPT | | T1,W3 | C204.2 |  |  |  |
| 3 | Object class – abstract classes and methods | 25-06-19 | PPT | | T1,W3 | C204.2 |  |  |  |
| 4 | final methods and classes | 27-06-19 | PPT | | T1,W3 | C204.2 |  |  |  |
| 5 | Interfaces – defining an interface, implementing interface | 28-06-19 | PPT | | T1,W3 | C204.2 |  |  |  |
| 6 | differences between classes and interfaces and extending interfaces | 29-06-19 | PPT | | T1,W3 | C204.2 |  |  |  |
| 7 | Object cloning /inner classes | 01-07-19 | PPT | | T1,W3 | C204.2 |  |  |  |
| 8 | ArrayLists | 02-07-19 | PPT | | T1,W3 | C204.2 |  |  |  |
| 9 | Strings | 02-07-19 | PPT | | T1,W3 | C204.2 |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 9 | | | |
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| **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 | 04-07-19 | | PPT | T1,R1 | C204.3 |  |  |  |
| 2 | throwing and catching exceptions | 05-07-19 | | PPT | T1,R1 | C204.3 |  |  |  |
| 3 | Built/in exceptions | 08-07-19 | | PPT | T1,R1 | C204.3 |  |  |  |
| 4 | Creating own exceptions | 09-07-19 | | PPT | T1,R1 | C204.3 |  |  |  |
| 5 | Stack Trace Elements | 10-07-19 | | PPT | T1,R1 | C204.3 |  |  |  |
| 6 | Input / Output Basics – Streams | 10-07-19 | | PPT | T1,R1 | C204.3 |  |  |  |
| 7 | Byte streams and Character streams | 12-07-19 | | PPT | T1,R1 | C204.3 |  |  |  |
| 8 | Reading and Writing Console | 13-07-19 | | PPT | T1,R1 | C204.3 |  |  |  |
| 9 | Reading and Writing Files | 15-07-19 | | 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** | | | |
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| **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 | 16-07-19 | | PPT | T2,W2 | C204.4 |  |  |  |
| 2 | Thread life cycle, creating threads | 17-07-19 | | PPT | T2,W2 | C204.4 |  |  |  |
| 3 | Synchronizing threads | 17-07-19 | | PPT | T2,W2 | C204.4 |  |  |  |
| 4 | Inter/thread communication | 19-07-19 | | PPT | T2,W2 | C204.4 |  |  |  |
| 5 | Daemon threads, thread groups | 20-07-19 | | PPT | T2,W2 | C204.4 |  |  |  |
| 6 | Generic Programming – Generic classes | 22-07-19 | | PPT | T2,W2 | C204.4 |  |  |  |
| 7 | Generic methods | 23-07-19 | | PPT | T2,W2 | C204.4 |  |  |  |
| 8 | Bounded Types, Restrictions and Limitations | 24-07-19 | | PPT | T2,W2 | C204.4 |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 8 | | | |
| Total No. of Hours Required as per Lesson Plan | | | | | | **8** | | | |
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| **UNIT V**  **EVENT DRIVEN PROGRAMMING** | | | | | | | | | |
| **Topics** | | **Planned Date** | | **Mode of Teaching** | **Reference** | **Course Outcome** | **Actual**  **Date** | **Day Order /Hour** | **Remarks** |
| 1 | Graphics programming / Frame | 24-07-19 | | PPT | T2,W2 | C204.5 |  |  |  |
| 2 | Components / working with 2D shapes | 26-07-19 | | PPT | T2,W2 | C204.5 |  |  |  |
| 3 | Using color, fonts, and images | 29-07-19 | | PPT | T2,W2 | C204.5 |  |  |  |
| 4 | Basics of event handling / event handlers | 30-07-19 | | PPT | T2,W2 | C204.5 |  |  |  |
| 5 | Adapter classes / actions / mouse events | 31-07-19 | | PPT | T2,W2 | C204.5 |  |  |  |
| 6 | AWT event hierarchy | 01-08-19 | | PPT | T2,W2 | C204.5 |  |  |  |
| 7 | Introduction to Swing – layout management / Swing Components | 01-08-19 | | PPT | T2,W2 | C204.5 |  |  |  |
| 8 | Text Fields , Text Areas – Buttons/ Check Boxes | 05-08-19 | | PPT | T2,W2 | C204.5 |  |  |  |
| 9 | Radio Buttons – Lists/ choices/ Scrollbars, Windows –Menus– Dialog Boxes. | 08-08-19 | | PPT | T2,W2 | C204.5 |  |  |  |
| 10 | Window Builder Tool Kit for Swing | 09-08-19 | | Demo | W2 | C204.5 |  |  |  |
| 11 | GUI program using Multi Threading | 13-08-19 | | Demo | W2 | 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 | | | | | | |
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| |  |  |  |  | | --- | --- | --- | --- | | **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**