**Lesson Plan of the 5th semester for session 2021-22**

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| **Name of the faculty:** | Ms. Neha Malik |
| **Designation :** | Assistant professor |
| **Discipline :** | Computer Science and Engg. |
| **Semester :** | 5th |
| **Subject :** | **Programming in Java (PCC-CSE-309G)** |
| **Lesson Plan duration :** | 15 weeks |
| **Work Load per week in hours:** | Lectures- 03 |

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| **Week** | **Lecture**  **day** | **Topic (Including Assignment/Test)** |
| **UNIT – I** | | |
| 1 | 1 | Evolution of Java, Object Oriented Programming Structure, Overview  and characteristics of Java, Java program Compilation and Execution Process |
| 2 | Organization of the Java Virtual Machine, Client side Programming, Platform Independency & Portability, Security, |
| 3 | Relation b/w JVM, JRE and JDK, Introduction to JAR format, Naming Conventions, Data types & Type casting, operators, |
| 2 | 4 | Security Promises of the JVM, Security Architecture and Security Policy, security aspects, sandbox model |  |
| 5 | Classes, Objects, attributes, methods, data encapsulation, reference  Variables |
| 6 | Constructors, Anonymous block, Method Overloading, Static Data members, Block & methods Memory Structure Stack, Heap, Class & Method area |
| 3 | 7 | Class loading & Execution flow: Static vs Dynamic Class loading, implicit vs explicit class loading, class loading operations |
| 8 | Argument Passing Mechanism: Passing primitive arguments, passing objects, Wrapper Classes |
| 9 | This keyword: Referencing instance members, Intra class constructor chaining, Method chaining |
| 4 | 10 | Inheritance & code reusability: Extending classes for code reusability, Usage of super keyword, Method Overriding, Object class |
| 11 | Static & Dynamic binding, Inheritance and Is-A  relation, Runtime Polymorphism and Generalization, Abstract classes & methods, Final Keyword |
| 12 | Interfaces and Role based Inheritance: Feature & Role based Inheritance |
| 5 | 13 | classes & interfaces, interface applications in real scenarios; Has-A  Relation, Aggregation & Composition |
|  | 14 | Nested classes, Inner classes, Anonymous Inner  classes, String Buffer Class, tokenizer, applets, Life cycle of applet and Security concerns |
|  | 15 | Creating Threads, Thread Priority, Blocked States, Extending Thread Class, Runnable Interface, Starting Threads, Thread Synchronization |
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| 6 | 16 | Synchronize Threads, Sync Code Block, Overriding Synced Methods, |
| 17 | Thread Communication, wait, notify and notify all, Assignments |
| 18 | Swing class hierarchy, containers, user interface components, graphics context |
| 7 | 19 | AWT Components, Component Class, Container Class, Layout Manager Interface Default Layouts, Insets and Dimensions |
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| 7 | 20 | Border Layout, Flow Layout, Grid Layout, Card Layout Grid Bag  Layout AWT Events, Event Models, Listeners |
| 21 | Class Listener, Adapters, Action Event Methods  Focus Event Key Event, Mouse Events, Window Event |
| 8. | 22 | Need of Packages, associating classes to Packages, Class path  environment variable, Import Keyword and Feature of static import |
| 23 | exception and error, Exception Handling & Robustness |
| 24 | Try and catch block, Exception handlers, throw keyword |
| 9. | 25 | Checked and Unchecked Exceptions, Role of finally, User defined Exceptions |
|  | 26 | Role and Importance of Collection Framework, List & Set based  collection, Iterator & List Iterator |
|  | 27 | Maps, searching elements in List, Hash and Tree based collections, |
| 10. | 28 | Role of equals and hash Code () methods, Comparable and Comparator  Interfaces, Thread Safety and Vector |
|  | 29 | Difference b/w Enumeration and Iterator, Type safety  and Generics, Common algorithms and Collections class, |
|  | 30 | Using Properties class for managing  properties files |
| 11 | 31 | Connectivity Using JDBC: Overview of native and ODBC Drives, |
|  | 32 | Introduction to JDBC, Type of JDBC drivers, Usage of drivers, D |
|  | 33 | Defining properties-based Connection Factory;  Basic database operations: Insert, Delete, Update, and Select |
| 12. | 34 | Prepared Statement: Statement, Prepared Statement, Setting Query parameters, Executing  Queries |
|  | 35 | **Callable Statement** Creating PL/SQL Stored procedures and functions |
| 36 | Creating Callable statements, Assignments |
| 13. | 37 | Executing procedures & functions |
| 38 | Batch Updating, Transacting Queries |
| 39 | Programmatic initialization of database |
| 14. | 40 | Result Set Metadata ,Test |
| 41 | Input/output Stream, Stream Filters, Buffered Streams, |
| 42 | Data input and Output Stream, Print  Stream Random Access File,  Reflection reflection API, |
| 15 | 43 | New Instance () method, java p tool, creating java p tool, creating |
| 44 | Applet viewer, call private method, java 9 features |
| 45 | Revision |