# SCHEME OF COURSE WORK

**Course Details:**

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| **Course Title** | **Object oriented programming through JAVA** | | |
| **Course Code** | **15CT1109** | **L T P C** | **: 3 0 0 3** |
| **Program:** | **B.Tech.** | | |
| **Specialization:** | **CSE** | | |
| **Semester** | **IV** | | |
| **Prerequisites** | **-** | | |
| **Courses to which it is a prerequisite** | **Web Programming** | | |

| | **Course Outcomes (COs): At the end of the course the student will be able to** |
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| 1 | Apply Object Oriented approach to design software |
| 2 | Implement programs using classes and objects |
| 3 | Apply exception handling and multithreading |
| 4 | Design and develop GUI based applications |
| 5 | Integrate event handling in GUI applications and develop networking applications |

**Course Outcome** Versus **Program Outcomes:**

| **COs** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **CO-1** | S | S | M | M | S | M | | | | | |
| **CO-2** | S | S | | | | | | | | | |
| **CO-3** | S | S | M | S | S | | | | | | |
| **CO-4** | S | S | S | M | M | | | | | | |
| **CO-5** | S | S | S | | S | | | | | | |

*S* - Strongly correlated, *M* - *Moderately* correlated, *Blank* - *No correlation*

| **Assessment Methods:** | Assignment /Quiz/ Mid-Test / End Exam |
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## Teaching-Learning and Evaluation

| Week | Topic/Contents | Course Outcomes | Sample Questions | Teaching-Learning Strategy | Assessment method &Schedule |
|---|---|---|---|---|---|
| 1. | Fundamentals of Object- Oriented paradigm, Basic concepts of object oriented programming, Benefits of Object Oriented Programming, Applications of Object Oriented Programming | CO-1 | 1. What is object oriented programming?<br>2. List basic features of object oriented programming.<br>3. What are the advantages of object oriented Programming<br>4. Explain two differences between object oriented programming paradigm and the structured- Oriented Programming paradigm. | Lecture<br>PPT | Mid Exam-1 and quiz-1 |
| 2. | Creation of java, Java's Bytecode, Java buzz words,<br>Evolution of Java, Overview of java, Simple Java Program, Datatypes and variables | CO-1 | 1. What is the purpose behind creation of Java.<br>2. Why ByteCode is generated?<br>3. List various data types in java along with their storage information. | Lecture<br>PPT | Mid Exam-1 and quiz-1 |
| 3. | Automatic type conversion, Arrays, operators, expressions, control statements | CO-1 | 1. How arrays are declared and allocated memory in java.<br>2. List various operators in java | Lecture<br>PPT | Mid Exam-1 and quiz-1 |
| 4. | Class fundamentals, declaring objects,assigning object reference variables,Methods in Java, overloading | CO-2 | 1. What is a class?<br>2. How objects are created?<br>3. Define Overloading | Lecture<br>PPT | Mid Exam-1 and quiz-1 |
| 5. | Argument passing,recursion,access control, Static and final keywords, Using command line arguments,variable length arguments,Construc | CO-2 | 1. When do we use static and final keywords?<br>2. How command line arguments are accessed? | Lecture<br>PPT | Mid Exam-1 and quiz-1 |

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| | tors,this keyword,garbage collection and finalize() method | | | | |
| 6. | String class,String Buffer class,String Builder class | CO-2 | 1.What is a mutable objects?<br>2. What is the difference between String class and String Buffer Class? | Lecture<br>PPT | Mid Exam-1 and quiz-1<br>Assignment |
| 7. | Inheritance basics, using super, creating a multilevel hierarchy, how constructors are called, Method overriding, dynamic method dispatch, using abstract classes, using final with inheritance, the Object class. | CO-2 | 1.What are various types of inheritance?<br>2.How constructors are called? | Lecture<br>PPT | Mid Exam-1 and quiz-1 |
| 8. | Packages, access protection, importing packages, interfaces. Exploring java.lang package: Wrapper classes, Math class. Exploring java.util package: Vector, Scanner, Date, Calendar, StringTokenizer, Random. Exploring java.io package: Byte streams, Character streams, File, Random Access File. | CO-3 | 1.Differentiate between a package and an interface.<br>2.What are the classes available in java.util.* | Lecture<br>PPT | Mid Exam-1 and quiz-1 |
| 9. | Mid Exam-1 and Quiz-1 | | | | |
| 10. | Exception-handling fundamentals, Exception types, uncaught exceptions, using try and catch, multiple catch clauses, nested try statements, throw, throws, finally, | CO-3 | 1.Define an Exception.<br>2. How built-in exceptions are created and used? | Lecture<br>PPT | Mid Exam-2 and quiz-2 |

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| | Java's built-in exceptions, creating your exception subclasses, using exceptions. | | | | |
| 11. | Java thread model, Main thread, creating a thread, creating multiple threads, using is Alive() and join(), thread priorities, synchronization, Interthread communication, suspending, resuming and stopping threads, using multithreading. | CO-3 | 1. What are the advantages of using threads in programming?<br>2. Discuss about inter thread communication. | Lecture<br>PPT | Mid Exam-2 and quiz-2 |
| 12. | Applet basics, architecture, skeleton, simple applet display methods, repainting, status window, HTML applet tag, passing parameters to applets. | CO-4 | 1.Describe the life cycle of an Applet.<br>2.How parameters are passed on to an Applet. | Lecture<br>PPT | Mid Exam-2 and quiz-2 |
| 13. | AWT classes, window fundamentals, working with frame windows, creating a frame window in an applet, creating a windowed program, displaying information within a window, working with graphics, working with color, working with fonts | CO-4 | 1. What is AWT?<br>2. How do we change the font of text using awt? | Lecture<br>PPT | Mid Exam-2 and quiz-2 |
| 14. | AWT control fundamentals, Labels, using buttons, applying | CO-4 | 1.How to create buttons using awt?<br>2.What is the purpose behind a | Lecture<br>PPT | Mid Exam-2 and quiz-2<br>Assignment |

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| | checkboxes, checkboxgroup, choice controls, using lists, scrollbars, textfield, text area, using layout managers, Menu bars and menus, dialog boxes. | | checkboxgroup? | | |
| 15. | Event handling mechanisms, delegation event model, event classes, sources of events, event listener interfaces, using the delegation event model, adapter classes, inner classes, handling events by extending AWT components. | CO-5 | 1. How to we add listener for a button?<br>2. Explain various types of events. | Lecture<br>PPT | Mid Exam-2 and quiz-2 |
| 16. | Basics, networking classes and interfaces, InetAddress, TCP/IP,URL | CO-5 | 1. What are the components of an InetAddress?<br>2. Explain about URL class. | Lecture<br>PPT | Mid Exam-2 and quiz-2 |