

SCHEME OF COURSE WORK

Course Details:

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|--------------------------------------|--------------------------------------------------------------|---------|-----------|
| Course Title | : OBJECT ORIENTED ANALYSIS & DESIGN | | |
| Course Code | : 15CT1125 | L T P C | : 3 0 0 3 |
| Program: | : B.Tech. | | |
| Specialization: | : Computer Science & Engineering, Information Technology | | |
| Semester | : VI | | |
| Prerequisites | : Software Engineering, Object Oriented Programming Language | | |
| Course to which it is a prerequisite | | | |

Course Outcomes (COs):

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|---|--------------------------------------------------|
| 1 | Explain basic Building Blocks in UML. |
| 2 | Create class and object diagrams in UML |
| 3 | Develop interaction, use case, activity diagrams |
| 4 | Design component and deployment diagrams. |
| 5 | Apply Object Oriented Design concepts. |

Program Outcomes (POs):

A graduate of Information Technology will be able to

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| 1 | Ability to apply the knowledge of mathematics, science, engineering fundamentals and principles of Information Technology to solve problems in different domains. |
| 2 | Ability to analyze a problem, identify and formulate the computing requirements appropriate to its solution. |
| 3 | Ability to design & develop software applications that meet the desired specifications within the realistic constraints to serve the needs of the society. |
| 4 | Ability to design and conduct experiments, as well as to analyze and interpret data |
| 5 | Ability to use appropriate techniques & tools to solve engineering problems. |
| 6 | Ability to apply the knowledge to analyze and understand societal, health, safety, legal, and cultural issues relevant to the Information Technology practices. |
| 7 | Ability to analyze the local and global impact of computing on individual as well as on society. |
| 8 | Ability to demonstrate professional ethical practices and social responsibilities in global and societal contexts. |
| 9 | Ability to function effectively as an individual, and as a member or leader in diverse and multidisciplinary Teams. |
| 10 | Ability to communicate effectively with the engineering community and with society at large |
| 11 | Ability to understand engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects. |
| 12 | Ability to recognize the need for updating the knowledge in the chosen field and imbibing learning to learn skills. |

Course Outcome versus Program Outcomes:

| Course Outcomes | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| CO1 | | 2 | 2 | | 2 | | | | | | | | | | |
| CO2 | | 2 | 2 | 2 | 2 | | | | 2 | 2 | 2 | | 2 | | |
| CO3 | | 3 | 3 | | 3 | | 2 | | 3 | 3 | 3 | | 2 | | |
| CO4 | | 3 | 3 | | 3 | | | | 3 | 3 | 3 | 2 | 2 | | |
| CO5 | | 3 | 3 | | 3 | | 2 | | 3 | 3 | 3 | 3 | | | |

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

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

| Week | TOPIC/ CONTENTS | Course Outcomes | Sample questions | TEACHING-LEARNINGS STRATEGY | Assessment Method & Schedule |
|------|-------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------|---------------------------------------|-------------------------------------------------------------------|
| 1 | An overview of object-oriented systems development. | CO-1 | 1. What is an object? | Lecture/Discussion Demonstration | Quiz(Week-7) Assignment (Week-6 to Week-8) Mid-Test1 |
| 2 | The Importance of Modeling, Principles of Modeling, Object Oriented Modeling | CO-1 | 1. What are the principles of modeling? | Lecture/Discussion | Quiz(Week-7) Assignment (Week-6 to Week-8) Mid-Test1 |
| 3 | An overview of the UML, A Conceptual Model of the UML, Architecture, Software Development Life Cycle. | CO-1 | 1. What is the importance of the modeling? | Lecture/Discussion | Quiz(Week-7) Assignment (Week-6 to Week-8) Mid-Test1 |
| 4 | Classes, Relationships, Common Mechanisms, and diagrams, | CO-2 | 1. What are common Mechanisms? | Lecture/Discussion Problem Solving | Quiz(Week-7) Assignment (Week-6 to Week-8) Mid-Test1 |
| 5 | Class diagrams | CO-2 | 1. Define a class diagram | Lecture/Discussion Problem Solving | Quiz(Week-7) Assignment (Week-6 to Week-8) Mid-Test1 |
| 6 | Advanced classes, advanced relationships, Interfaces, | CO-2 | 1. Define advanced relationships | Lecture/Discussion | Quiz(Week-7) Assignment (Week-6 to Week-8) Mid-Test1 |
| 7 | Types and Roles, Packages, Object Diagrams | CO-2 | 1. Define Types and Roles | Lecture/Discussion | Quiz(Week-7) Assignment (Week-6 to Week-8) Mid-Test1 |

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| 8 | Interactions, Interaction diagrams, Use cases, Use case diagrams, Activity Diagrams | CO-3 | 1. Define Interaction and use case diagram | Lecture/Discussion | Quiz(Week-7) Assignment (Week-6 to Week-8) Mid-Test1 |
| 9 | Mid-Test1 | | | | |
| 10 | Events and signals, state machines | CO-3 | 1. Define state chart diagrams | Lecture/Discussion Problem solving | Quiz (Week-17) Assignment(Week 15 to Week-17) |
| 11 | processes and Threads, time and space, state chart diagrams | CO-3 | 1. Define processes and threads | Lecture/Discussion | Quiz (Week-17) Assignment(Week 15 to Week-17) |
| 12 | Component, Deployment | CO-4 | 1. What is a component? | Lecture/Discussion | Quiz (Week-17) Assignment(Week 15 to Week-17) |
| 13 | Component diagrams and Deployment diagrams | CO-4 | 1. Draw the symbols of component and deployment | Lecture/Discussion | Quiz (Week 17) Assignment (Week 15 to Week- |
| 14 | Design Patterns | CO-4 | 1. Define Patterns | Lecture/Discussion | Quiz (Week-17) Assignment(Week 15 to Week-17) |
| 15 | Systems and Models | CO-4 | 1. What are systems and models? | Lecture/Discussion | Quiz (Week-17) Assignment(Week 15 to Week-17) |
| 16 | Bank ATM Application | CO-5 | 1. Draw use case diagram for ATM application | Lecture/Discussion | Quiz (Week-17) Assignment(Week 15 to Week-17) |
| 17 | Railway Reservation System | CO-5 | 1. Draw class diagram for Railway Reservation System | Lecture/Discussion | Quiz (Week-17) Assignment (Week 15 to Week-17) |
| 18 | Mid-Test2 | | | | |
| 19/20 | ENDEXAM | | | | |