

|                              |                                                           |
|------------------------------|-----------------------------------------------------------|
| <b>Branch Name:</b>          | Computer Engineering (Software Engineering)               |
| <b>Program Code:</b>         | ET203                                                     |
| <b>Course Title:</b>         | Software Architecture and Design Pattern Practical        |
| <b>Course Code:</b>          | 2ET2030207P                                               |
| <b>Pre-requisite Course:</b> | Fundamentals of Computer Networking and Embedded Systems. |

**Course Objectives:** After successful completion of the course, student will be able to

- 1. Understand the architecture, creating it and moving from one to any, different structural patterns.
- 2. Analyze the architecture and build the system from the components.
- Gain knowledge on how to design UML diagrams.

**Teaching and Examination Scheme:**

| Credit | Teaching Scheme<br>Hours per week |   |   |       | Evaluation Scheme (Marks) |      |      |      |                   |      |      |      |                  |
|--------|-----------------------------------|---|---|-------|---------------------------|------|------|------|-------------------|------|------|------|------------------|
|        |                                   |   |   |       | Theory (Marks)            |      |      |      | Practical (Marks) |      |      |      | Total<br>(Marks) |
|        | L                                 | T | P | Total | SEE                       |      | CCA  |      | SEE               |      | CCA  |      |                  |
|        |                                   |   |   |       | Min.                      | Max. | Min. | Max. | Min.              | Max. | Min. | Max. |                  |
| 1      | -                                 | - | 2 | 2     | —                         | —    | —    | —    | 10                | 25   | 10   | 25   | 50               |

**Course Contents:**

| Unit No | Topics                                                                   | Total Hours |
|---------|--------------------------------------------------------------------------|-------------|
| 1       | Use case Diagram for Librarian Scenario                                  | 04          |
| 2       | Using UML design Abstract factory design pattern                         | 02          |
| 3       | Using UML design Adapter-class Design pattern                            | 02          |
| 4       | Using UML design Adapter-object Design pattern                           | 03          |
| 5       | Using UML design Strategy Design pattern                                 | 02          |
| 6       | A-7E Avionics System: A Case Study in Utilizing Architectural Structures | 01          |
| 7       | The World Wide Web'A Case Study in Interoperability                      | 03          |
| 8       | Air Traffic Control: A Case Study in Designing for High Availability     | 03          |
| 9       | <b>Study report of any two design patterns.</b>                          | 02          |
| 10      | <b>Study report for any of the MVC based ramewor!s "J2EE"</b>            | 02          |



|             |   |   |   |  |   |  |  |  |  |  |  |   |  |  |  |  |
|-------------|---|---|---|--|---|--|--|--|--|--|--|---|--|--|--|--|
| <b>CLO2</b> | H | M |   |  | M |  |  |  |  |  |  | L |  |  |  |  |
| <b>CLO3</b> | H | M | M |  | M |  |  |  |  |  |  |   |  |  |  |  |

**H: High, M: Medium, L: Low**