

## Course related to Professional Ethics

SEM	Course Code	Core 7:	Total Marks: 100		Hours per Week	Credits
IV	17UAJCT402	Software Engineering	CIA: 25	ESE: 75	3	3

**Objectives:** To enable the students to understand the phases in a software project and fundamental concepts of Software development and maintenance.

**Course Outcome:** On Completion of this course the students will able to

CO1 Know the Needs of software and use of various Process Models.

CO2 Apply the Process Models for the software development.

CO3 Know the Practices in software engineering process and requirement engineering.

CO4 Understand design Engineering process in software development.

CO5 Know various types of Software testing and its procedures.

**UNIT – I: Introduction to Software Engineering:** Software – The Changing nature of Software – Legacy Software - Software myths. **Software Process:** The Process Framework – CMMI – Process Assessment – Personal and Team Process Models.

**UNIT – II: Process Models:** Prescriptive Models – The Waterfall Model – Incremental Process Model: the Incremental Model – The RAD Model – Evolutionary Process Models: Prototyping – The Spiral Model – The Concurrent Development Model – Specialized Process Models: Component based Models – Aspect Oriented software Development – The Unified Process.

**UNIT – III: Software Engineering Practice:** Essence of Practice – Core Principles – Communication Practices – Planning Practices – Modeling Practice – Construction Practice – Deployment. **Requirement Engineering:** Requirement Engineering Tasks – Eliciting Requirements – Developing Use Cases – Building the Analysis Model – Negotiating Requirements – Validating Requirements.

**UNIT – IV: Design Engineering:** Design within the context of Software Engineering – Design Concepts – The Design Model. **Performing User Interface Design:** The golden rules – User Interface Analysis and Design – Interface Analysis – Interface Design Steps – Design Evaluation.

**UNIT V: Testing Strategies:** A Strategic Approach to Software Testing – Strategic Issues – Test Strategies for Conventional Software – Test Strategy for Object – Oriented Software – Validation Testing – System Testing – Art of debugging. **Testing Tactics:** Fundamentals – White Box Testing – Basis Path Testing – Control Structure Testing – Black Box Testing – Object Oriented Testing Methods.

**TEXT BOOK:**

Roger S Pressman, “Software Engineering A Practitioner’s Approach”, McGraw – Hill International Edition, Sixth Edition, 2005.



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