SREE VIDYANIKETHAN ENGINEERING COLLEGE (Autonomous)

Sree Sainath Nagar, A. Rangampet-517 102

## Department of Information Technology

## Lesson Plan cum Dairy 2016-17

**Name of the Subject:** Software Engineering (14BT51202)

**Name of the faculty Member:** Mr. P. Srinivasa Reddi & Mr. K. Khaja Baseer

**Class& Semester:** III B.Tech – I Semester          **Section: IT – A&B**

| S. No. | Topic | No. of periods required | Book(s) followed | Self-Learning concepts |
|---|---|---|---|---|
| **UNIT-I: INTRODUCTION TO SOFTWARE ENGINEERING** | | | |
| 1. | The evolving role of the software, Software Myths | 1 | T1 | Agile process models- Extreme programming, Adaptive development. |
| 2. | Software Engineering – Layered Technology | 1 | T1 | |
| 3. | Process Framework, CMMI | 1 | T1 | |
| 4. | Process patterns, Process Assessment | 1 | T1 | |
| 5. | Personal and Team Process Models | 1 | T1 | |
| 6. | Water Fall Model, Incremental Model | 1 | T1 | |
| 7. | RAD, Prototyping Model | 1 | T1 | |
| 8. | Spiral Model, Concurrent Development Model | 1 | T1 | |
| 9. | Unified Process, Agile Process | 1 | T1 | |
| | Total of periods required: | **09** | | |
| | **UNIT-II: REQUIREMENTS ENGINEERING** | | | |
| 10. | Functional and Non-Functional Requirements | 1 | T2 | Identify functional and non-functional requirements for Graphics Editor. |
| 11. | The Software Requirements Document | 1 | T2 | |
| 12. | Requirements specifications, | 1 | T2 | |
| 13. | Requirements engineering processes | 1 | T2 | |
| 14. | Requirements Elicitation and Analysis | 1 | T2 | |
| 15. | Requirement Validation, Requirement Management | 1 | T2 | |
| 16. | Context Models, Interaction Models | 1 | T2 | |
| 17. | Structured Models, Behavioral models | 1 | T2 | |
| 18. | Model driven engineering | 1 | T2 | |
| | Total of periods required: | **09** | | |
| | **UNIT-III: DESIGN ENGINEERING** | | | |
| 19. | Design Process and Design Quality, Design Concepts | 2 | T1 | Design Use case diagram for Graphics Editor |
| 20. | Software Architecture, Data Design | 1 | T1 | |
| 21. | Architecture Styles and Patterns | 1 | T1 | |
| 22. | Architectural Design | 1 | T1 | |
| 23. | Golden Rules, User Interface Analysis and Design | 1 | T1 | |
| 24. | Interface Analysis | 1 | T1 | |

| 25. | Interface Design Steps | 1 | T1 | |
|---|---|---|---|---|
| 26. | Re-engineering | 1 | T1 | |
| | **Total of periods required:** | **09** | | |
| | | | | |

| **UNIT-IV: SOFTWARE TESTING** | | | | |
|---|---|---|---|---|
| 27. | A strategic approach to software testing | 1 | T1 | |
| 28. | Strategic issues | 1 | T1 | |
| 29. | Test strategies for conventional software | 1 | T1 | |
| 30. | Test strategies for object oriented software | 1 | T1 | Testing for specialized environments, architecture and applications. |
| 31. | Validation testing, System testing | 1 | T1 | |
| 32. | The art of debugging | 1 | T1 | |
| 33. | Testing tactics: Software testing fundamentals, white box testing | 1 | T1 | |
| 34. | Basis path testing, Control structure testing | 1 | T1 | |
| 35. | Black box testing | 1 | T1 | |
| 36. | Object oriented testing methods | 1 | T1 | |
| | **Total of periods required:** | **10** | | |

| **UNIT-V: RISK AND QUALITY MANAGEMENT** | | | | |
|---|---|---|---|---|
| 37. | Risk management: Reactive vs Proactive Risk Strategies, Software Risks | 1 | T1 | 1) Design Risk Mitigation, Monitoring and Management for i)Technology does not meet specifications ii)Late Delivery |
| 38. | Risk Identification, Risk Projection, Risk Refinement | 1 | T1 | |
| 39. | RMMM,RMMM Plan | 1 | T1 | |
| 40. | Quality management: Quality concepts, Software quality assurance | 2 | T1 | |
| 41. | Software reviews, Formal technical reviews | 1 | T1 | |
| 42. | Formal approaches to SQA, Statistical software quality assurance | 1 | T1 | |
| 43. | Software reliability | 1 | T1 | 2) ISO 9000 quality standards, SQA plan. |
| | **Total of periods required:** | **08** | | |
| | **Grand total of periods required:** | **45** | | |

**TEXT BOOKS:**

T1. Roger S. Pressman, **"Software Engineering, A practitioner's Approach",** McGraw-Hill International Edition, 6thedition, 2010.

T2. Ian Sommerville, **"Software Engineering",** Pearson Education, 9thedition, 2011.

**REFERENCE BOOKS:**

R1. K. K. Aggarwal &Yogesh Singh, **"Software Engineering",** New Age International Publishers, 3<sup>rd</sup>edition, 2007.

R2. Shely Cashman Rosenblatt, **"Systems Analysis and Design",** Thomson Publications, 6<sup>th</sup> edition, 2006.