

3IT83: SOFTWARE PROJECT MANAGEMENT
CREDITS – 3 (LTP: 3,0,0)

Course Objective:

To provide understanding of various stages of software development and quality management process.

Teaching and Assessment Scheme:

| Teaching Scheme (Hours per Week) | | | Credits | Assessment Scheme | | | | Total Marks |
|-------------------------------------|---|---|---------|-------------------|-----|-----------------|-----|----------------|
| L | T | P | | Theory Marks | | Practical Marks | | |
| | | | ESE | CE | ESE | CE | 150 | |
| 3 | 0 | 0 | 3 | 60 | 40 | - | | - |

Course Contents:

| Unit No. | Topics | Teaching Hours |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 1 | Project Management: The management spectrum, The people, The product, The process, The project, Software development life cycle, Typical software roles and responsibilities, Components, Review of models for software development, The W5HH principle. | 4 |
| 2 | Project Life Cycle And Effort Estimation Software process and process models, Choice of process models, Rapid application development, Agile methods, Extreme Programming, SCRUM, Managing interactive processes, Basics of software estimation, Effort and Cost estimation techniques, COCOMO II A Parametric productivity model - Staffing Pattern. | 8 |
| 3 | Activity Planning And Risk Management Objectives of activity planning, Project schedules, Activities, Sequencing and scheduling, Network planning models, Forward pass & backward pass techniques, Critical path (CRM) method, Risk identification, Assessment monitoring, PERT technique, Monte carlo simulation, Resource allocation, Creation of critical patterns, Cost schedules. | 8 |
| 4 | Quality Planning: Quality concepts, Procedural approach to quality Management, Quantitative approaches to quality management, Quantitative quality management planning, Setting the quality goal, Estimating defects for other stages, Quality process planning, Defect prevention planning. | 4 |
| 5 | Quality Management: Quality concepts, Software quality assurances, software reviews, formal technical reviews, Formal approaches to SQA, Statistical software quality assurances, Change Management: software Configuration management, The SCM repository, SCM Process, Configuration management for web engineering. | 4 |

| Unit No. | Topics | Teaching Hours |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 6 | Project Management in Maintenance of Projects: Introduction, Software project maintenance life cycle, Process, estimation, Configuration management, Metrics, Defect prevention. | 8 |
| 7 | Project Execution And Closure: The review process, Planning, Overview and preparation, Group review meeting, Rework and follow-up, one-person review, Guidelines for reviews in projects, Data collection, Analysis and control guidelines, Introduction of reviews and the NAH syndrome. | 6 |
| 8 | Software Testing Tools: Test case generation Methodology, Study of various testing tools. | 3 |
| Total | | 45 |

List of References:

1. R. S. Pressman, "*Software Engineering*", 7thed, Tata McGraw Hills.
2. Pankaj Jalote, "*Software project management in practice*", Addison-Wesley.
3. B. Hughes & M. Cotterell, "*Software Project Management*", Tata McGraw Hills.
4. Mantel et al., "*Project Management – Core text Book*", Wiley .
5. Roger S. Pressman, "*Software Engineering: A practical Approach*", McGraw-Hill.

Course Outcomes (COs):

At the end of this course students will be able to ...

1. Understand significance of Software development life cycle.
2. Understand steps of software estimation.
3. Analysis of various risk management technique.
4. Reconstruct software using quality management technique.
5. Calculate overall time of software using project execution cycle.
6. Apply software testing tool on real time software.