

Department of Computer Applications
National Institute of Technology, Tiruchirappalli – 620 015.

CA 840 - INTEGRATED SOFTWARE PROJECT MANAGEMENT

UNIT I PROJECT MANAGEMENT CONCEPTS

Evolution of Software Economics – Software Management Process Framework (Phases, Artifacts, Workflows, Checkpoints) – Software Management Disciplines (Planning / Project Organization and Responsibilities / Automation / Project Control) – Modern Project Profiles – Maturity Models

UNIT II COSTING & LIFECYCLE MANAGEMENT

Problems in Software Estimation – Algorithmic Cost Estimation Process, Function Points, COCOMO II (Constructive Cost Model) – Estimating Web Application Development – Concepts of Finance, Activity Based Costing and Economic Value Added (EVA) – Balanced Score Card, SLIM (Software Life cycle Management) – PLM (Product Lifecycle Management) – PDM (Product Data Management) – PLM, PDM Applications – Pre-PLM Environment – Pre-PLM Lifecycle – Change Management

UNIT III RISK MANAGEMENT

Perspectives of Risk Management – Risk Definition – Risk Categories – Risk Assessment: Approaches, techniques and good practices – Risk Identification / Analysis / Prioritization – Risk Control (Planning / Resolution / Monitoring) – Risk Retention – Risk Transfer – Failure Mode and Effects Analysis (FMEA) – Operational Risks – Supply Chain Risk Management

UNIT IV METRICS

Need for Software Metrics – Classification of Software Metrics: Product Metrics (Size Metrics, Complexity Metrics, Halstead's Product Metrics, Quality Metrics), and Process metrics (Empirical Models, Statistical Models, Theory-based Models, Composite Models, and Reliability Models).

UNIT V PEOPLE MANAGEMENT

Leadership styles – Developing Leadership skills – Leadership assessment – Motivating People – Organizational strategy – Management – Team building – Delegation – Art of Interviewing People – Team Management – Rewarding – Client Relationship Management.

REFERENCES:

1. Stark, John. Decision Engineering: Product Lifecycle Management: 21st Century Paradigm for Product Realisation. 2nd Edition., 2011, XXII, 559 p., Springer London
2. Antonio Borghesi, Barbara Gaudenzi, Risk Management: How to Assess, Transfer and Communicate Critical Risks. Volume 5 of Perspectives in Business Culture. Illustrated Edition, Springer 2012
3. McConnell, S. "Software Project: Survival Guide", Microsoft Press, 1998.
4. Boehm, B. W. "Software Risk Management: Principles and Practices" in IEEE Software, January 1991, pp32-41.
5. Fenton, N.E., and Pfleeger, S.L., "Software Metrics: A Rigorous and Practical Approach, Revised" Brooks Cole, 1998.
6. Royce, W. "Software Project management: A Unified Framework", Addison-Wesley, 1998.

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