SOFTWARE PROCESS AND PROJECT MANAGEMENT

Course Code: 13IT2110

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Pre requisites:

1. Software Engineering.
2. Software Project Management.

Course Educational Objectives:

The main objective of the course is to make students understand how to manage software projects .Upon completion of this course, the student should be able to:

1. To understand the draw backs of traditional project management methods.
2. To understand the principles of modern software project management.
3. To show how to reduce rework, labor-intensiveness, expenditure and produce a project within schedule.
4. Get awareness on ethical issues related to software project management.
5. Understand how different management and development practices affect software and process quality.

Course Outcomes:

At the end of the course the student will be able to

1. Analyze software process maturity, its framework and the reference models .
2. Understand the Capability Maturity Model and learn about conventional software management.
3. Understand how to manage software projects and project planning.
4. Analyze project tracking and control.
5. Understand the role of project closure analysis.

UNIT-I

Software Process Maturity, Software maturity Framework: Principles of Software Process Change, Software Process Assessment, The Initial Process, The Repeatable Process, The Defined Process, The Managed Process, The Optimizing Process.

Process Reference Models
Capability Maturity Model (CMM): CMMi, PCMM, PSP, TSP, IDEAL, Process Definition Techniques.

UNIT-II
Software Project Management Renaissance: Conventional Software Management, Evolution of Software Economics, Improving Software Economics, The old way and the new way.

UNIT-III
Managing Software Projects: Project Management and the CMM, Project Management and CMMi, Project Management Process Framework.
Project Planning: Software Life Cycle Models, Project Organizations and Responsibilities, Artifacts of the Project Management Process, Cost and Scheduling estimation, Establishing Project Environment, Risk Management, Quality Assurance and Configuration Management.

UNIT-IV
Project Tracking and Control: Defect Tracking, Issue Tracking, Status Reports, Milestone Analysis, Defect Analysis and Prevention Methods, Process monitoring and audit, Reviews, Inspections and Walkthroughs, Seven Core Metrics, Management indicators, Quality Indicators.

UNIT-V
Project Closure: Project Closure Analysis, Role of Closure Analysis in a project, Performing Closure Analysis, Closure Analysis Report.
CCPDS-R Case Study and Future Software Project Management Practices: Modern Project Profiles, Next-Generation software Economics, Modern Process Transitions.

Text Books:
1. Watts S. Humphrey, *Managing the Software Process*, 1st Edition, Pearson Education, 2002.
2. Walker Royce, *Software Project Management A Unified Framework*, 1st Edition, *Pearson* Education, 2002.

References:

1. Watts S. Humphrey, *An Introduction to the Team Software Process*, 1st Edition, Addison-Wesley International Publications, 2000.

2. Watts S. Humphrey, *A Discipline to Software Engineering*, 1st Edition, Pearson Education, 2008.

3. Pankaj Jalote, *Software Project Management in Practice* , 1st Edition , Pearson Education, 2011.

4. Chris Kemerer , *Software Project Management Readings and Cases*, 1st Edition, Pearson Education, 2011.

Web references:

1. www.projectreference.com

2. www.projectminds.com/usefulwebsite.html