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## **20MC112 SOFTWARE PROJECT MANAGEMENT**

### **Course Description and Objectives:**

This course is aimed at introducing the primary important concepts of project management related to managing software development projects. They will also get familiar with the different activities involved in Software Project Management. Further, they will also come to know how to successfully plan and implement a software project management activity, and to complete a specific project in time with the available budget.

### **Course Outcomes:**

- Identify the different project contexts and suggest an appropriate management strategy.
- Practice the role of professional ethics in successful software development.
- Identify and describe the key phases of project management.
- Determine an appropriate project management approach through an evaluation of the business context and scope of the project.

### **Skills:**

- Suggesting an efficient management strategy for a business scenario.
- Demonstrate through application, knowledge of the key project management skills, such as product and work break-down structure, schedule, governance including progress reporting, risk and quality management
- Demonstrate an ability to present his/her ideas both formally and informally to a group of their peers and the management.

### **Activities:**

- Perform case studies on cost estimation models like COCOMO, COCOMO II and COQUAMO etc...
- Implement a WBS for a given specific software application.
- Comparative analysis on Process Vs Product metrics.

## **Syllabus**

### **UNIT – 1**

**12 Hours**

SOFTWARE MANAGEMENT & ECONOMICS: The Waterfall Model, Conventional Software Management Performance; Evolution of Software Economics - Software economics, Pragmatic software cost estimation, Reducing software product size, Improving software processes.

### **UNIT – 2**

**12 Hours**

THE OLD AND THE NEW WAY OF PROJECT MANAGEMENT: Improving team effectiveness, Improving automation through software environment, Achieving required quality; Peer inspections – A pragmatic view, The principles of conventional software engineering, Principles of modern software management, Transitioning to an iterative process.

**UNIT – 3****12 Hours**

**SOFTWARE MANAGEMENT PROCESS FRAMEWORK:** Life cycle phases, The artifact sets, Management artifacts, Engineering artifacts, Pragmatic artifacts; Model-Based Software Architectures - A management perspective and A technical perspective.

**UNIT – 4****12 Hours**

**PROJECT ORGANIZATION AND PLANNING:** Work breakdown structures, Planning guidelines, The cost and schedule estimating process, The iteration planning process, Pragmatic planning, Line-of-Business organizations, Project organizations, Evolution of organizations; Process automation - Automation building blocks, The project environment.

**UNIT – 5****12 Hours**

**PROJECT CONTROL AND PROCESS INSTRUMENTATION:** The Seven-Core metrics, Management indicators, Quality indicators, Life-Cycle expectations, Pragmatic software metrics, Metrics automation, Modern project profiles, Next generation software economics, Modern process transitions.

**Text Book:**

Walker Royce, “Software Project Management”, 1<sup>st</sup> Edition, Pearson Education, 2006.

**References Books:**

1. Bob Hughes and Mike Cotterell, “Software Project Management”, 3<sup>rd</sup> Edition, Tata McGraw Hill Edition, 2005.
2. Joel Henry, “Software Project Management”, 1<sup>st</sup> Edition, Pearson Education, 2006.
3. Pankaj Jalote, “Software Project Management in practice”, 1<sup>st</sup> Edition, Pearson Education, 2005.