

CS 587: Programming Project Management

Objectives

At the completion of this course, students will have the following competencies:

- Understand how to create project plan, track and record task status, and present project status to management.
- Have a thorough understanding of the software project management process and the software development process.
- Understand the fundamental concepts necessary to manage a modern software project including techniques and tools used for project initiation, project planning and control, project status reporting and reviews, project completion and lessons learned analysis.
- Understand why risk management and contingency planning are at the heart of any successful project.
- Understand the issues regarding the project cost, resources, schedule, productivity and quality.
- Understand the skills required of a successful project manager who is capable of leading and managing the team members and build a reliable relationships with the customers and higher management.

Prerequisites

- CS 487.

Syllabus

- Introduction
 - Roadmap for Software Product Line
 - Software: Computer Science, Software engineering, and Software Project Management
 - Organizational Structures
 - Software Applications
 - Software Process
 - The Growth of Project Management as a Profession
- Principles of Project Management
 - Defining
 - Planning
 - Executing
 - Controlling
 - Closing
- Project Analysis
 - Estimating project size and complexity
 - Tools and techniques
 - Scheduling
- Resource Management
 - Assessing Competencies and Skills
 - Resource allocation
- Project Monitoring
 - Metrics collection and analysis
 - Milestones
 - Status reporting
- Risk Management
 - Risk identification, quantification, and prioritization
 - Risk avoidance, mitigation, and contingency planning
- Configuration Management
 - Basic configuration concept
 - Configuration management process
 - Configuration Control and Configuration Audits
- Software Product Line
 - Software product line and Variation Points
 - Feature-oriented Programming
 - Generative Programming
- Quality Planning and Assessment
 - ISO Audits & quality reviews
 - Testing process and Product Certification
 - Monitoring compliance with processes
 - Process improvement