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

Edited March 2006 (html, css checks)