

SFE 4050: SOFTWARE PROCESS AND PROJECT MANAGEMENT

Prerequisite APT 2080: Introduction to Software Engineering

3 credits units

Rationale

Course Description

The course addresses the aspects of software process and project management. Topics include:

Software Process Maturity Software maturity Framework; Process Reference Models Capability Maturity Model; Software Project Management Renaissance Conventional Software Management; Project Planning Software Life Cycle Models; Project Tracking and Control issues.

Course learning outcomes

At the end of the course, students will be able to:

1. Understand aspect of software process and project management
2. Demonstrate understanding of software process framework
3. Perform software defects analysis
4. Apply 7 score metrics to software project
5. Management large scale software project

Course Content

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

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

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

Teaching Methodology

The course will be taught by lecture, group work, exercises, and demonstrations (labs)

Instructional material & equipment

Textbooks, whiteboard, handouts, electronic projector and laptop, Internet access, software and the library.

Method of evaluation

Class assignments, take-home assignments, tests, small projects to demonstrate use of software tools

Laboratory Work	20%
Project	20%
Assignments	10%
Mid-semester	20%
Final semester exams	30%
Total	<u>100%</u>

Course Text

Process-based software project management by F. Alan Goodman – 2006

Software project management in practice by Pankaj Jalote – 2005

Software project management: measures for improving performance by Robert Bruce Kelsey – 2006

Managing the Software Process by Watts S. Humphrey, published by Pearson Education

Software Project Management, by Walker Royce, published by Pearson Education

Networking Concentration Options