Software Process and Quality Management

Introduction

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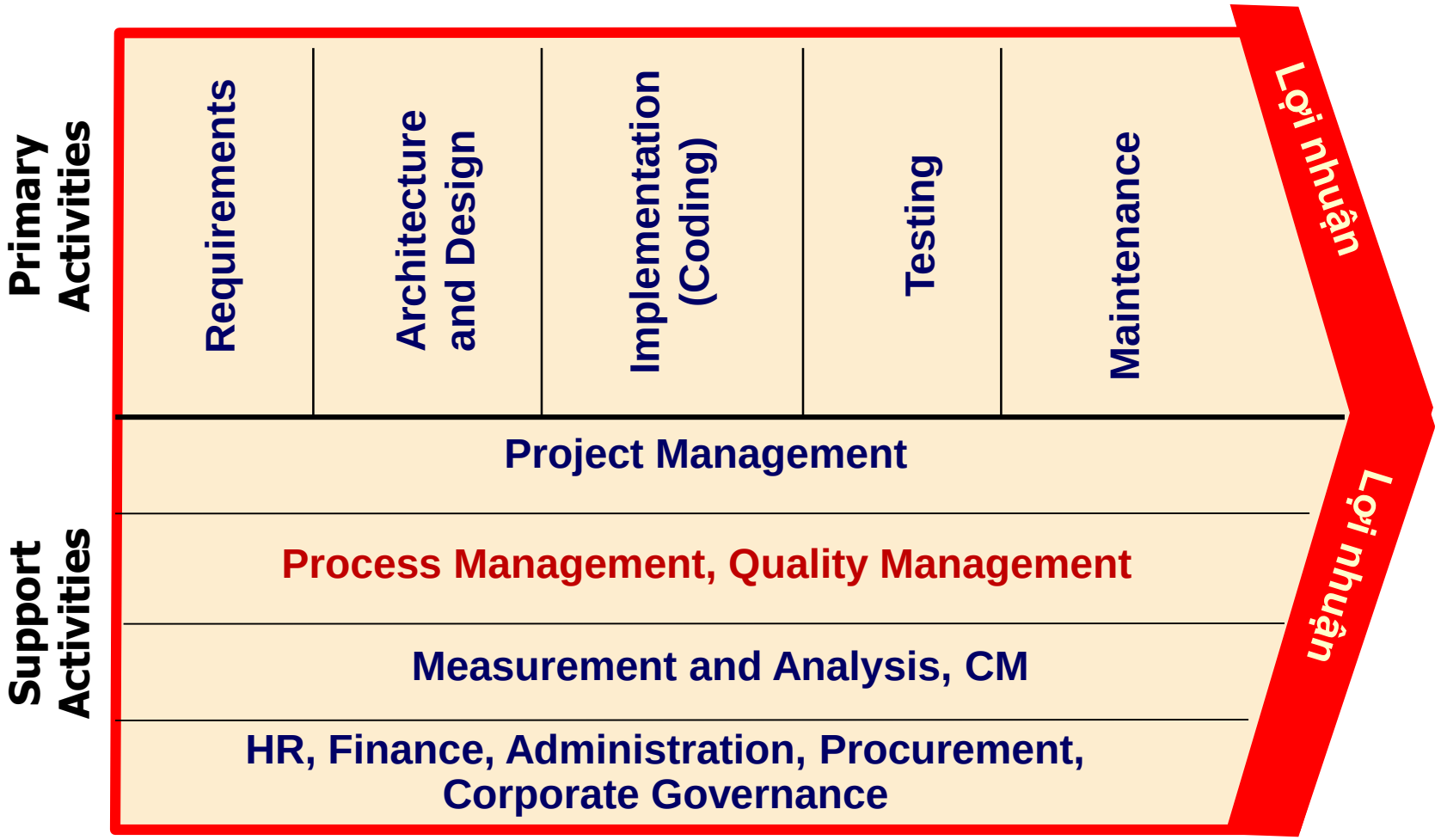
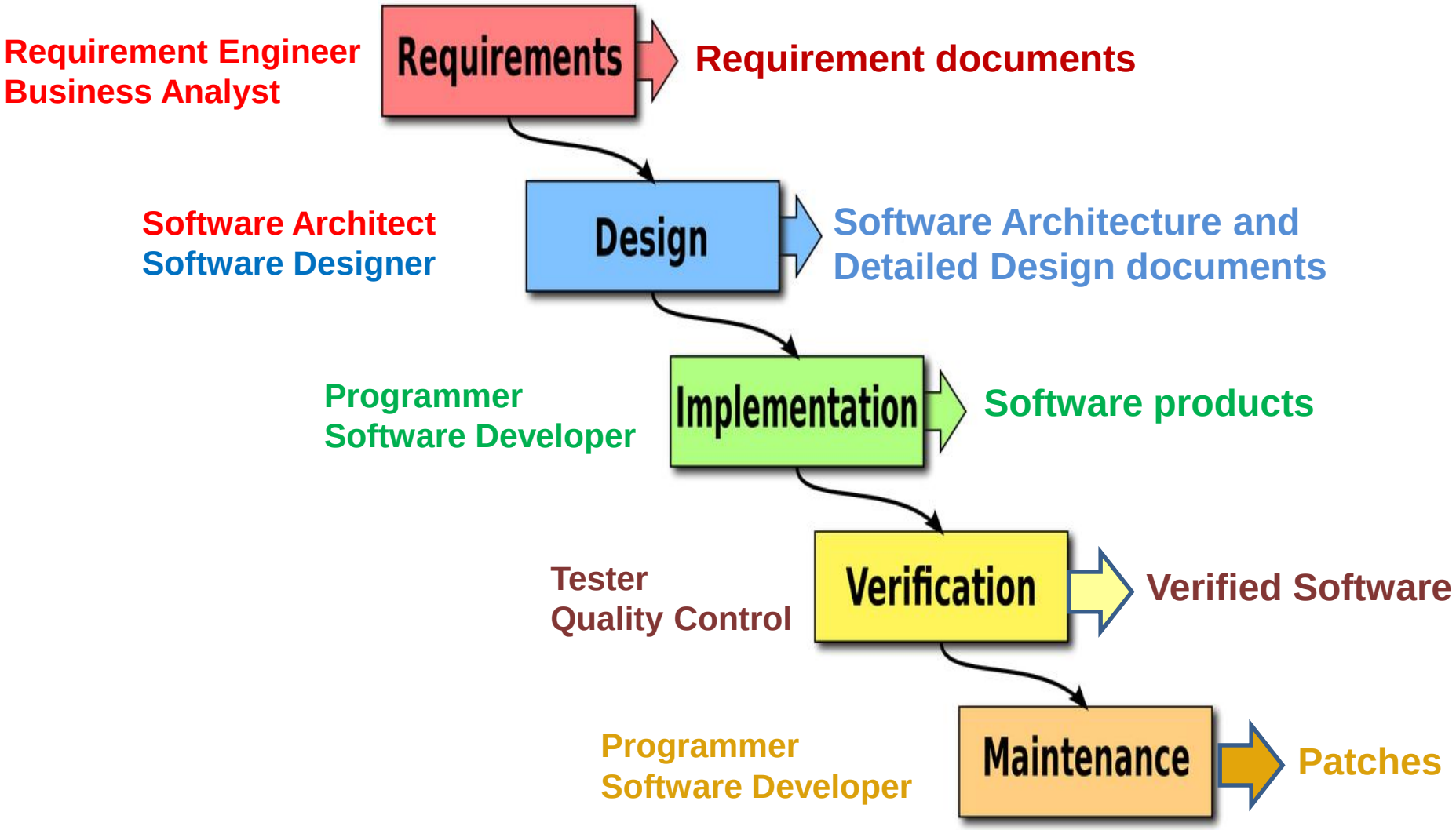
Content

- Software Value Chain
- Course background
- Learning outcomes, topics
- Course approach
- Course Logistics
- Expectations on Student
- Student's expectation

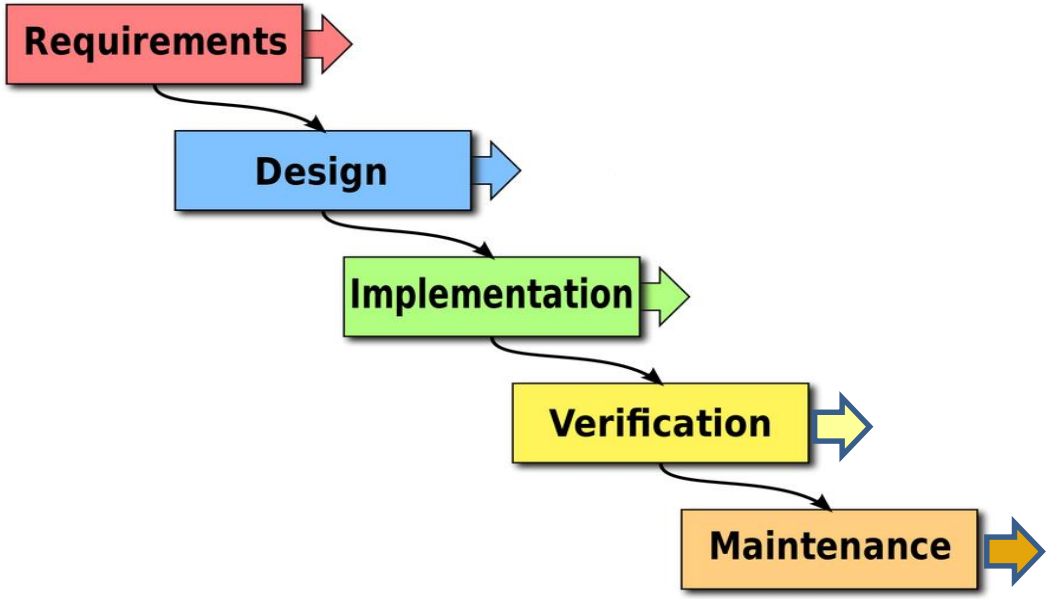
Software Value Chain



SE – Primary Activities



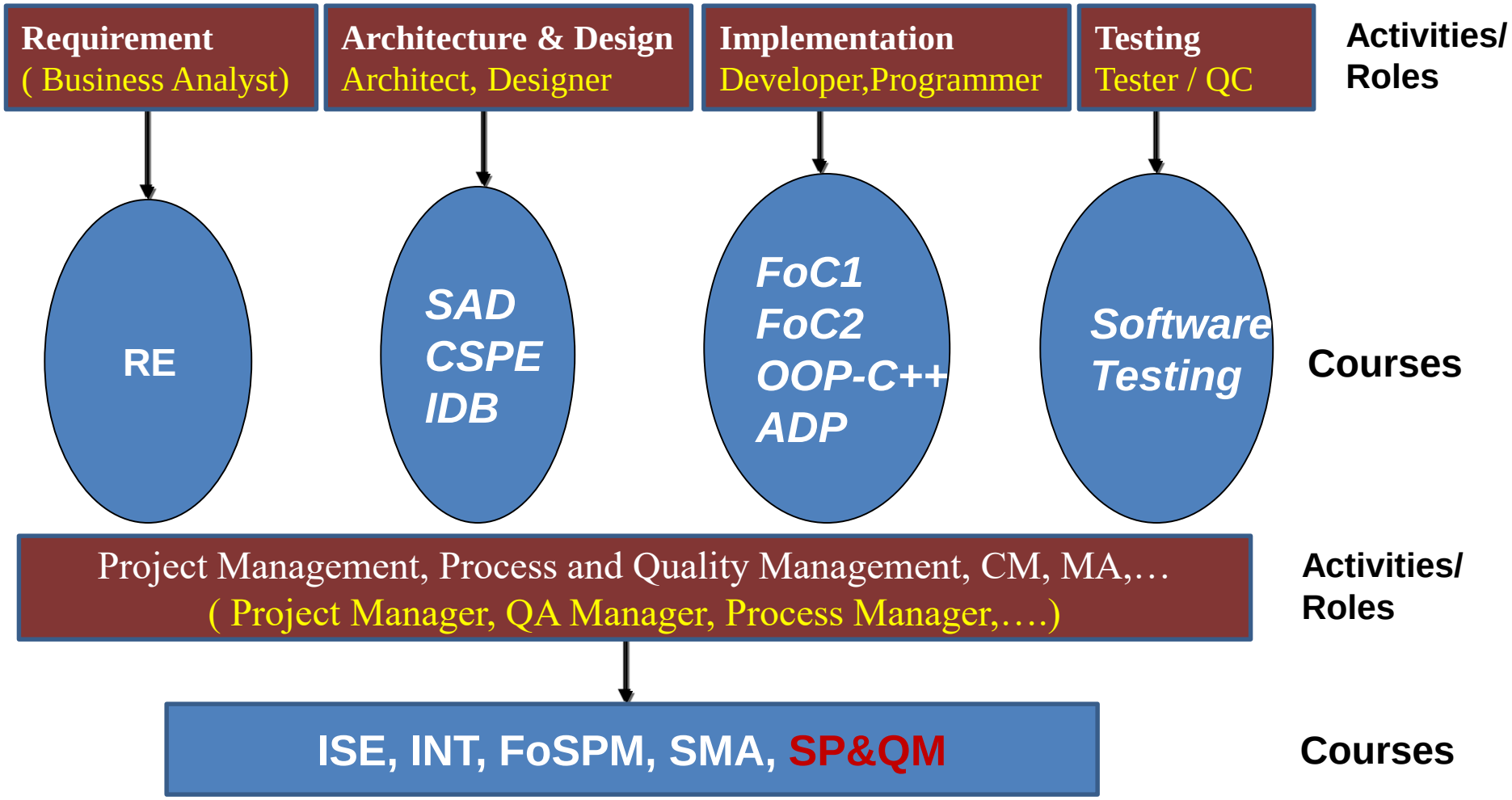
Software Engineering – Support Activities



Project Manager	Software Project Management	Project Plan
QA Manager Process Manager	Quality Management and Process Improvement	Quality Plan PI Plan
CM, MA Specialist	Configuration Management, Measurement & Analysis	Source codes, Artifacts Management System

CMU Core Courses

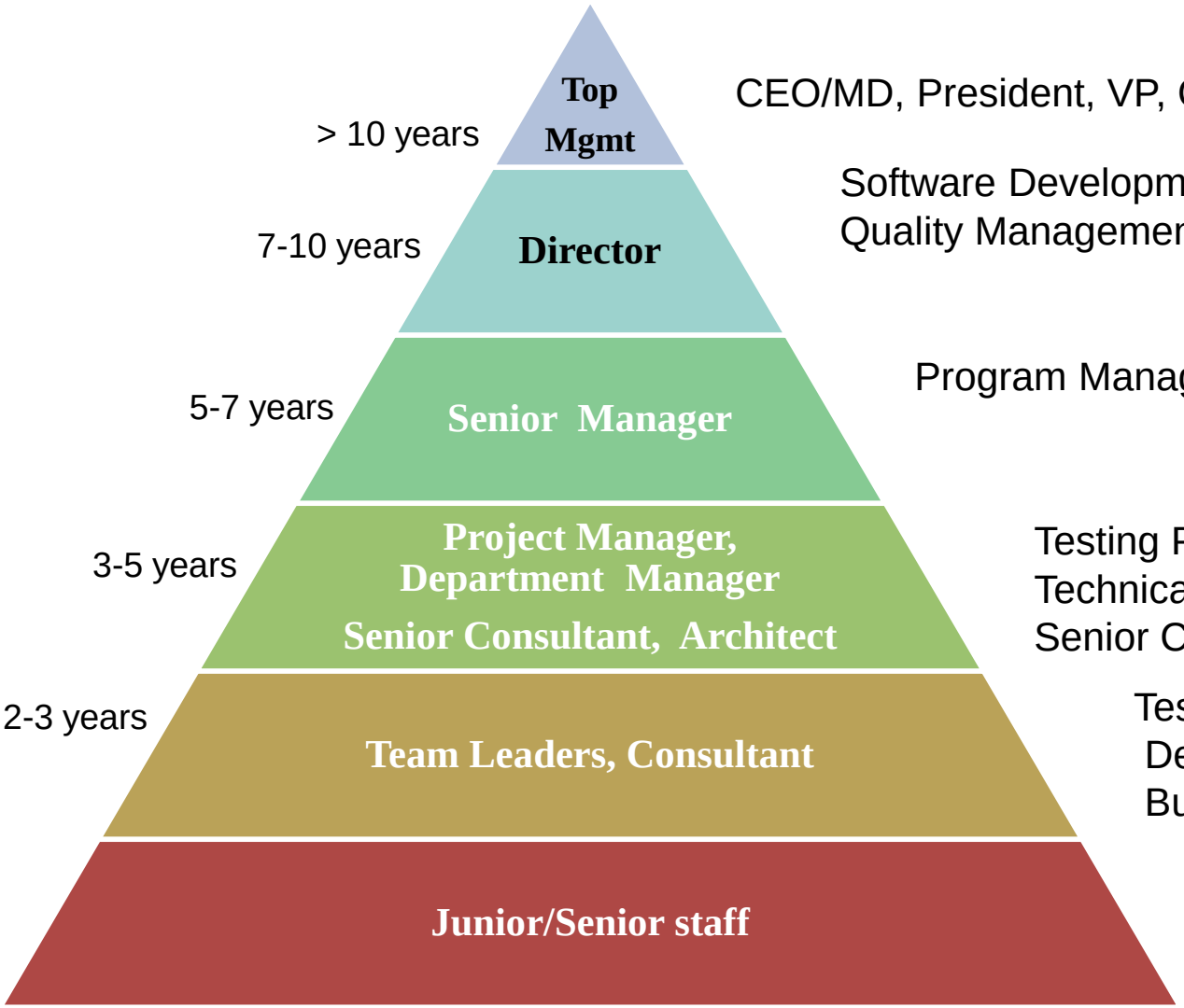
CMU Core Course map to Software Engineering Activities and Software Engineer Career



Practical SE Series

- ISE
- ICNT, FoC1
- ADP, OOP&C++, FoC2
- CSPE, RE
- FoSPM, Software Testing
- SAD, SMA
- Capstone Project 01, SP&QM
- Capstone Project 02

Software Engineer-Career Path



Course Description

- Concepts of Software Quality, Software Quality management, Software process, Software process management/improvement.
- Define and document software processes.
- Value of software quality and process improvement
- Specific models and standards related to Quality management and Process improvement

Learning objectives

- Define and criticize the concepts of process and quality in the context of software development;
- Evaluate development activities against an accepted, standardized lifecycle model (ISO 12207);
- Appreciate the value of software quality improvement and process improvement;
- Recognize and apply popular models and standards related to Software Quality Management and Software Process Improvement in software development organizations such as: ISO 9001 and TickIT, CMMI-DEV, IDEAL, SPICE (ISO 15504), ITIL, CoBIT,..

Learning objectives (con't)

- Develop and implement Software quality management plan and Software process improvement plan.
- Defend the developed plans both from a logical, best practices and a business point of view.

Course Topics

- 1: Introduction
- 2: Software Quality Fundamentals
- 3: Software Quality Management
- 4: Software Process Concepts and Definitions
- 5: Software Process Assessment and Improvement
- 6: Value of Software Quality and Process Improvement
- 7. TQM and ISO 9000
- 8. TickIT and TickIT Plus
- 9. CMMI-DEV Part 1

Course Topics (Con't)

- 10. CMMI-DEV Part 2
- 11. IDEAL
- 12. SPICE (ISO 15504)
- 13. Six Sigma & Lean Six Sigma
- 14. ITIL
- 15. ISO 27000, Course Summary

Course Approach

- The focus is on active problem solving to promote the acquisition of usable knowledge rather than the collection of memorized facts.
- You are expected to apply the knowledge you have gained to analyze provided case studies, solve simulated problem
- You will learn to express your ideas clearly and persuasively, and be able to negotiate effectively and with authority.
- Self-directed learning.

Learning By Doing Phases

- 1. *Experience* – Full involvement in new learning style of scenarios and real situation experiences
- 2. *Observations and reflection* – Reflection on and observation of other learner's experiences from many perspectives in teamwork sharing and participation in class discussions
- 3. *Formation of knowledge and generalizations* – Creation of concepts that integrate the learners' observations into comprehensive knowledge
- 4. *Applying knowledge in new situations* – Using these theories to make decisions and solve problems on teamwork assignments to demonstrate learning objectives

Course Policy/Regulation (1)

- Late submission of Team Assignment is not allowed.
- Submit Team Member Evaluation along with that Team Assignment.
- If the submission has multiple files, please store all your files into one folder and use winrar to compress this folder into single file.
- Any student come to class later than 15 minutes will be rejected to enter class room
- Sleeping in class is not allowed
- Turn off laptop during Lecturing session.

Course Policy/Regulation (2)

- All Individual Team Assignment must be followed the File Name Convention
  - Class -Team# -Team Assignment#

  (Example: K24T1-Team1-TeamAssignment1)

  (No mark for any submission violating File Name Convention)
- Submit team assignment to appropriate location. Submitting wrong location will not be graded.
- Lecturer refuse to start the class if projector and microphone are not available on time.

Expectations on Students

- Continue to leverage what you've learned previously
- Work with your team to get organized
- Take ownership of your own success:

> "No matter how much I admire our schools, I know that no university exists that can provide an education; what a university can provide is an outline, to give the learner a direction and guidance. The rest, one has to do for oneself."
>
> - *Education of a Wandering Man, Louis L'Amour*

Summary

- Learning outcomes:
  - Software quality management
  - Software process management/improvement
  - Process definition
  - Standards and models
- Course approach
- Expectations on Student
- Student's expectation

Questions & Answers