

# Human Aspects and Software engineering Principles

## ▼ Traits of Effective Software Engineer

- Sense of individual responsibility
- Acute awareness of the needs of others (collabration)
- Honest and brave to face the truth
- Exhibits resilience under pressure
- Heightened sense of fairness
- Exhibits attention to detail
- Pragmatic (decide what to do)

## ▼ Software Team

### ▼ Jelled team

#### ▼ Features

- Sense of purpose
- Sense of involvement
- Sense of trust
- Sense of improvement
- Diversity: a variety of different skill sets

- An efficient team: people strongly knit

### ▼ Boundaries

- Reduces communication and therefore reduce the team effectiveness

#### ▼ Boundaries spanning roles

- Ambassador, scout, guard, sentry, coordinator

## ▼ Software Process

- Guiding practice establish a fundation from which software engineering is conducted

### ▼ Core principles

- Be agile
- Focus on quality at every step
- Be ready to adapt
- Build an effective team
- Establish mechanisms for communication and coordination
- Manage change
- Assess risk
- Create products that provide value for others

## ▼ Software Engineering Practice

### ▼ Core principles

- Divide and conquer
- Understand the use of abstraction
- Strive for consistency
- Focus on the transfer of information
- Build software that exhibits effective modularity — highly cohesive, loose enough (adjusting to changes)
- Look for patterns (deciding the best)
- Represent the problem and its solution from different perspectives

- Remember that someone will maintain the software

## ▼ **Activities Communication Principles**

- Customer requirements must be gathered through the communication activity before they can be analyzed, modeled or specified

### ▼ Core principles

- Listen (from different perspectives)
- Prepare before you communicate (background understanding)
- Someone should facilitate the activity
- Face-to-face communication is best
- Take notes and document decisions — support your understanding
- Strive for collaboration — ensure responsibilities
- Stay focus; modularize discussions
- Use drawing whenever something is unclear
- Move on
- Negotiation works best when both parties win

## ▼ **Activities Planning Principles**

- The planning activity encompasses a set of management and technical practices that enables the software team to define a road map as it travels toward its strategic goal and tactical objectives

### ▼ Core principles

- Understand the scope to the project — know the plan, communicate with the stakeholder
- Involve stakeholders in the planning activity
- Recognize that planning is iterative
- Estimate based on what you know
- Consider risk when defining the plan
- Be realistic
- Adjust granularity (details) when defining the plan
- Define how you intend to ensure quality
- Describe how you intend to accommodate change
- Track the plan frequently and adjust as required