

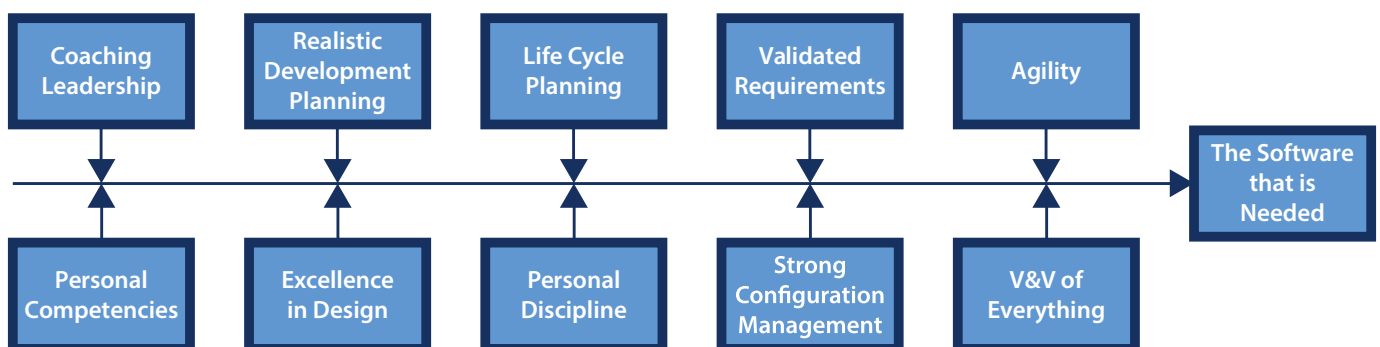
SOFTWARE ENGINEERING

THE DIFFERENCE BETWEEN THE 16% OF LARGE SOFTWARE PROJECTS THAT SUCCEED AND THE...

5-DAY COURSE

... 84% THAT FAIL OR ARE SUCCESS-CHALLENGED IS ENGINEERING (STANDISH GROUP, 2018).
LEARN HOW TO MAKE THE DIFFERENCE.

This 5-day course in Software Engineering provides an overview of the elements for the effective realization of software and software-intensive systems that are cost-effective, on schedule, and meet stakeholder needs over the full life cycle. The course approaches software development from, simultaneously, a software technology and a systems perspective in the engineering of small and large, simple and complex software, and software-intensive systems. The course provides proven principles and effective methods for creating solutions to satisfying stakeholders with excellent, cost-effective software, reflecting agile and incremental approaches.



"The personal experience of the presenter helped in understanding the course material as he was able to put things into perspective/practice. It has backed up a lot of my views and gave me confidence in my working role."

- participant, EADS, United Kingdom



1. Introduction and Overview

- introduce the presenter and go over the learning methodology
- an overview of course structure and methodology
- general introduction into software engineering
- history of software development, recent trends, the current state and beyond the current state
- an engineering approach to software development including concurrent engineering, systems methodology and thinking
- key role-players in a typical software development environment
- life cycle characteristics and typical stages
- process fundamentals and development models
- sequential versus incremental and iterative development models
- different software development methodologies and their applicability
- the performance of different software development methodologies
- lean software development and value-driven design
- tailoring and process improvement principles

2. Technical Processes

- requirement analysis
 - system requirements, system boundaries, hierarchy and subsystems
 - requirement quality attributes and other fundamentals
 - requirement documentation, natural language, UML, and storyboards

- requirement parsing
- concept of use documents
- software tools
- common pitfalls in performing RA
- software design
 - design fundamentals
 - architectural styles and patterns
 - evolutionary architecture
 - design methods
 - software design notations and presentations
 - documentation and tools
- software construction
 - dealing with complexity
 - standards for coding
 - process
 - assessing quality
- system and software integration
 - integration strategies
 - system orientated architecture
 - web services
 - communication protocols
 - interface controls
 - pitfalls and pointers
- validation and verification
 - fundamentals
 - formal, informal, technical, design, code, requirement and other reviews
 - testing
 - other V&V methods

- transition (transfer between different owners)
- operations, maintenance and support
- disposal or retirement

3. Project Processes

- project management: frameworks, planning,

- assessment and control
- estimation and costing
- risk management
- configuration management
- change management
- quality management
- release and deployment
- information management
- human elements and building effective teams

4. Agreement Processes

- overview and contract models
- acquisition
- supply

5. Enterprise-Level Processes

- project portfolio management and program management
- life cycle model management
- quality management
- human resource management
- knowledge management
- enterprise tools

6. Specialty Fields

This section briefly looks at a couple of specialty fields, providing enough information to appreciate the significance and be able to interact with experts in the field. Topics include:

- engineering of trusted/high integrity systems
- software life cycle cost analysis
- interoperability
- usability analysis and human system integration

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