

PROCESS IMPACT

11491 SE 119TH DRIVE
HAPPY VALLEY, OR 97086-8278
PHONE: 503-698-7879
WWW.PROCESSIMPACT.COM

Description: eLearning Course “In Search of Excellent Requirements”

Description: Requirements form the foundation for all the software work that follows. Arriving at a shared vision of the product to be developed is one of the greatest challenges facing the software project team, and customer involvement is among the most critical factors in software quality. This eLearning course by Karl Wiegers describes dozens of tested methods that can help any organization improve the way it elicits, analyzes, documents, validates, and manages its software requirements. The course provides students with a tool kit of “good practices,” reinforced with practice sessions, that they can begin applying to improve the requirements processes in their organization. These techniques can reduce project risk by improving the quality and control of the software requirements, thereby increasing the likelihood of a successfully completed project. The course presents many practical techniques, including:

- Creating an effective customer-developer partnership
- Customer involvement through a “product champion” model
- The application of use cases and user stories for defining user needs
- Writing software requirements specifications using a standard template
- Recording business rules that affect a software system
- A simple model for prioritizing requirements
- Constructing visual models to provide alternative views of the requirements
- Using prototypes to clarify and refine user needs
- Using peer reviews and acceptance tests to find requirements errors
- Precisely defining quality attributes and other nonfunctional requirements
- Managing changes to requirements
- Tracking requirements status throughout the project
- Creating a requirements traceability matrix
- Choosing appropriate requirements techniques for agile, outsourced, enhancement, and packaged solution projects

Objectives: On completion of this course, the student will be able to:

- Describe a three-level requirements model
- Recognize and classify different types of requirements information
- Name many “good practices” for requirements elicitation, analysis, specification, validation, and management
- Describe the role of the business analyst
- Apply the use case technique for eliciting user requirements
- Select appropriate techniques for representing requirements on your projects
- Critically evaluate requirements statements for ambiguity and other problems
- Write clear, unambiguous, and actionable requirements

Audience: This course will be useful to business analysts, requirements engineers, project and product managers, user representatives, developers, marketers, and testers.

Components: 17 course modules
257 slides
11 hours of audio presentation
22 practice sessions
15 quizzes
11 magazine articles
numerous templates, work aids, spreadsheet tools, and sample requirements deliverables

Outline: eLearning Course “In Search of Excellent Requirements”

Course Introduction (9 minutes)

Module 1: Introduction to Requirements Engineering (57 minutes)

- A. Define “software requirement”
- B. Describe three levels of software requirements: business, user, and functional
- C. Describe characteristics of high-quality requirements
- D. Subdisciplines of requirements engineering
- E. Practice session: Identify requirements problems in the student’s projects
- F. Quiz

Module 2: Requirements Development Process (34 minutes)

- A. A requirements development process framework
- B. Requirements on agile, outsourced, enhancement, and packaged solution projects
- C. The role, responsibilities, and skills of the business analyst
- D. Quiz

Module 3: Customer Involvement (19 minutes)

- A. The customer-development partnership
- B. Customer rights and responsibilities for requirements
- C. What about sign-off?
- D. Quiz

Module 4: Business Requirements (28 minutes)

- A. Business objectives
- B. The vision and scope document
- C. Project priorities: features, quality, staff, budget, and schedule
- D. Practice session: Writing a vision statement
- E. The context diagram
- F. Practice session: Drawing a context diagram
- F. Quiz

Module 5: Requirements Elicitation (77 minutes)

- A. Sources of software requirements
- B. Classifying requirements into categories
- C. Practice session: Classifying requirements
- D. Stakeholders and user classes
- E. Customer involvement: the product champion model
- F. Requirements elicitation questions to ask
- G. Facilitating requirements elicitation workshops
- H. Resolving requirements conflicts
- I. Quiz

Module 6: User Requirements (68 minutes)

- A. Developing user requirements through use cases
- B. Use cases and user stories
- C. Case study of a use-case elicitation workshop
- D. Use case document template
- E. Reviewing use cases
- F. Practice session: Describing a use case for a sample project
- G. Using event-response tables to represent user requirements
- H. Quiz

Module 7: Business Rules (18 minutes)

- A. Examples of different types of business rules
- B. Writing atomic business rules
- C. Practice session: Writing business rules
- D. Quiz

Module 8: Requirements Specification (65 minutes)

- A. The software requirements specification (SRS) template
- B. Requirements development and requirements management tools
- C. Practice session: Reviewing a portion of an SRS
- D. Guidelines for writing high-quality requirements
- E. Detecting and correcting ambiguous requirements
- F. Practice session: Examining functional requirements for problems and rewriting them
- G. Quiz

Module 9: Quality Attributes (38 minutes)

- A. Internal and External software quality attributes
- B. Specifying quality attributes precisely with Planguage
- C. How quality attributes are used
- D. Design and implementation constraints
- E. Practice session: Writing quality attributes
- F. Quiz

Module 10: Requirements Prioritization (20 minutes)

- A. A requirements prioritization scale
- B. Factors affecting requirements priorities
- C. A spreadsheet tool for prioritizing requirements

Module 11: Requirements Analysis and Modeling (61 minutes)

- A. Using analysis models to represent requirements visually
- B. The data dictionary
- C. Modeling user interfaces with dialog maps
- D. Practice session: Drawing a dialog map from use cases
- E. Decision tables and decision trees
- F. Finding missing requirements
- G. Quiz

Module 12: Prototyping (18 minutes)

- A. Reducing the expectation gap through prototyping
- B. Mock-ups and proof-of-concept prototypes
- C. Throwaway and evolutionary prototypes
- D. Combining prototyping approaches
- E. Quiz

Module 13: Requirements Validation (29 minutes)

- A. The V-model for software development
- B. Requirements validation techniques
- C. Peer reviews and inspections
- D. Acceptance criteria and acceptance tests
- E. Moving from requirements to design, testing, and project management

Module 14: Requirements Management Principles (16 minutes)

- A. Requirements management goals and prerequisites
- B. Requirements metrics
- C. Quiz

Module 15: Requirements Management Practices (65 minutes)

- A. Version management
- B. Change management
- C. Managing change on agile projects
- D. Requirements change impact analysis
- E. Requirements attributes
- F. Tracking requirements status
- G. Requirements traceability
- H. Requirements and risk management
- I. Practice session: Risks on the student's project
- J. Quiz

Module 16: Improving Your Requirements Processes (30 minutes)

- A. Some process improvement principles
- B. The learning curve
- C. Signs of management commitment to better requirements
- D. Practice session: Barriers to process improvement
- E. The process improvement change cycle
- F. Practice session: Designing a requirements change control process
- G. Practice session: Selecting solutions to the requirements problems identified in Module 1
- H. Quiz

Module 17: Summary (13 minutes)

- A. Summaries of good practices for requirements development and requirements management
- B. Requirements traps to avoid
- C. Practice session: Writing a requirements process improvement action plan