Syllabus Details

Syllabus ID:	11814
Syllabus Name:	**Software Requirement_Yêu cầu phần mềm**
Course Name English:	**Software Requirement**
Subject Code:	**SWR302**
NoCredit:	3
Degree Level:	Bachelor
Time Allocation:	Study hour (150h) = 45h contact hours + 1h TE + 1.5h PE + 102.5h self-study
Pre-Requisite:	SWE102 or SWE201c
Description:	This course is a model-based introduction to RE, providing the conceptual background and terminology on RE, addressing a variety of techniques for requirements development including Analysis and Requirements Elicitation; Requirements Evaluation; Requirements Specification and Documentation; Requirements Quality Assurance. To implement these frameworks, student will be learnt how to find appropriate customer representatives, elicit requirements from them, and document user requirements, business rules, functional requirements, data requirements, and nonfunctional requirements. The numerous visual models that will be represented to illustrate the requirements from various perspectives to supplement natural-language text. Other contents recommend the most effective requirements approaches for various specific classes of projects: agile projects developing products of any type, enhancement and replacement projects, projects that incorporate packaged solutions, outsourced projects, business process automation projects, business analytics projects, and embedded and other real-time systems.
StudentTasks:	- Students must attend at least 80% of contact slots in order to be accepted to the final examination. - Student is responsible to do all exercises given by instructor in class or at home and submit on time - Promptly access to the https://flm.fpt.edu.vn/ for up-to-date course information
Tools:	- Microsoft office for documents and presentation. - https://www.visual-paradigm.com/download/community.jsp students must install visual-paradigm for drawing UML (offline) before taking Final Practical Exam - BOUML (http://bouml.free.fr/) : UML Drawing software
Scoring Scale:	10
DecisionNo MM/dd/yyyy:	862/QĐ-ĐHFPT dated 08/16/2024
IsApproved:	**True**
Note:	In the case: (5 > Final TE Score >=4) & (5 > Final PE Score >=4) & FR < 5, the student can choose to take the resit of both TE & PE OR just either TE or PE.
MinAvgMarkToPass:	5
IsActive:	True
ApprovedDate:	8/16/2024

4 material(s)

MaterialDescription	Author	Publisher	PublishedDate	Edition	ISBN	IsMainMaterial	IsHardCopy	IsOnline	Note
Software Requirements	Karl E. Wiegers	Microsoft Press		Third Edition	978-0-7356-7966-5	☑	☑	☐	
More About Software Requirements: Thorny Issues and Practical Advice	Karl E. Wiegers	Microsoft Press			978-0-7356-2267-8	☐	☑	☐	
The Software Requirements Memory Jogger: A Pocket Guide to Help Software And Business Teams Develop and Manage Requirements	Ellen Gottesdiener	GOAL/QPC			978-1-57681-060-6	☐	☑	☐	
Requirements Engineering: Secure Software Specifications Specialization		Coursera				☐	☐	☑	https://www.coursera.org/specializations/requirements-engineering-secure-software

9 LO(s)

CLO Name	CLO Details
CLO1	Develop a good understanding of principles and techniques for requirement enginneering (RE) regarding requirement inception, requirement development(elicitation, analysis, specification, validation) and requirement management; understand main characteristics of specific projects
CLO2	Identify the appropriate requirements elicitiation techniques to identify requirements

CLO3	Utilize various requirements validation techniques to critically evaluate their requirements to identify defects
CLO4	Analysis of system requirements and the production of system specifications
CLO5	Create models of requirements using a variety of notations and techniques, including domain and usage models
CLO6	Design and plan software solutions to problems using an object-oriented strategy
CLO7	Prepare and deliver coherent and structured verbal and written technical reports
CLO8	Understand how to reduce risks by prototyping.
CLO9	Utilize the tactic of requirements management regarding changing, tracing and improving requirements

View mapping of CLOs to PLOs

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Session	Topic	Learning-Teaching Type	LO	ITU	Student Materials	S-Download	Lecturer Materials	T-Download	Student's Tasks	Lecturer Tasks	URLs
1	Course Introduction The essential of software requirement - Software requirements defined	Offline	LO1	I	Chapter 1 + Slides	SWR302		SWR302			
2	The essential of software requirement (cnt) - Requirements development and management - When bad requirements happen to good people - Benefits from a high-quality requirements process	Offline	LO1	I	Chapter 1 + Slides	SWR302		SWR302			
3	Requirements from the customer's perspective - Who is the customer? - The customer-development partnership - Creating a culture that respects requirement	Offline	LO1	I,T	Chapter 2 + Slides						
4	Requirements from the customer's perspective (cnt) - Identifying decision makers - Reaching agreement on requirements Assignment introduction	Offline	LO1	I,T	Chapter 2 + Slides				do homework		

5	Good practices for requirements engineering (introduce) - A requirements development process framework - Requirements elicitation - Requirements analysis - Requirements specification - Requirements validation - Requirements management	Offline	LO1, LO2	I,T	Chapter 3 +Slides						
6	Good practices for requirements engineering (practice/apply)	Offline	LO1, LO2	I,T	Chapter 3 +Slides				do homework		
7	Group discussion Summary and Exercises (groups)	Offline	LO2, LO4, LO5		Chapter 4+ Business Analyst Job Description.docx + Slides				Discuss what students have to do in their Assignment		
8	Group discussion Summary and Exercises (groups)	Offline	LO2, LO4, LO5		Chapter 4+ Business Analyst Job Description.docx + Slides				Discuss what students have to do in their Assignment		
9	The business analyst - The business analyst role - The business analyst's tasks - Essential analyst skills - Essential analyst knowledge - The making of a business analyst - The analyst role on agile projects	Offline	LO2, LO4, LO5	I,T, U	Chapter 4+ Business Analyst Job Description.docx + Slides				Write Vision and Scope for Assignment		
10	Establishing the business requirements - Defining business requirements - Vision and scope document - Scope representation techniques	Offline	LO2, LO4, LO5	I,T, U	Chapter 5 + Vision and Scope Template.docx + Slides				Write Vision and Scope for Assignment		
11	Establishing the business requirements (con't) - Keeping the scope in focus - Vision and scope on agile projects - Introduce LAB requirements: draw 1 context diagram, 1 swimlane diagram and 1 state diagram.	Offline	LO2, LO4, LO5		Chapter 5 + Vision and Scope Template.docx + Slides				Practice on first half of Assignment	Introduce LAB requirements and deadline to submit	

12	Finding the voice of users - User classes - User personal - Connecting with user representatives - The product champion - User representation on agile project - Resolving conflicting requirements	Offline	LO2, LO4, LO5		Chapter 6 + Product Champion Responsibilities.docx + Slides				Practice on first half of Assignment		
13	Requirements elicitation - Requirements elicitation techniques: Interviews, workshops, Focus groups, Observations, Questionaires, System interface analysis, User Interface Analysis, Document Analysis - Planning and Preparing for elicitation on your project - Performing elicitation activities - Follow up after elicitation	Offline	LO2, LO3	I,T, U	1. Use Case Template.docx 2. Chapter 7 + 8 +Slides				Finish Use Case document		
14	Requirements elicitation (cnt) - Classifying customer input - Some cautions about elicitation - Assumed and implied requirements - Finding missing requirements	Offline	LO2, LO3	I,T, U	1. Use Case Template.docx 2. Chapter 7 + 8 +Slides				Finish Use Case document		
15	Understanding user requirements - Use cases and user stories	Offline	LO5, LO6	T,U	1. Use Case Template.docx 2. Chapter 7 + 8 +Slides				Finish Use Case document		
16	Understanding user requirements (cnt) - The use case approach - Benefits of usage-centric requirements	Offline	LO5, LO6	T,U	1. Use Case Template.docx 2. Chapter 7 + 8 +Slides				Finish Use Case document		
17	Playing by the rules - A business rules taxonomy - Documenting business rules - Discovering business rules - Business rules and requirements - Tying everything together	Offline	LO4, LO5	T,U	1.Software Requirements Specification Template.docx 2. Chapter 9 + 10 +Slides				Preparing the structure of SRS document (based on student's assignment)		
18	Progress test 1 and Review	Offline	LO1,LO2,LO3,LO4,LO5,LO6		LSM questions				Quiz test		

19	Documenting the requirements - The software requirements specification	Offline	LO7	T,U	1.Software Requirements Specification Template.docx				Preparing the structure of SRS document (based on student's assignment)		
20	Documenting the requirements (cnt) - A software requirements specification template - Requirements specification on agile projects	Offline	LO7	T,U	2. Chapter 9 + 10 +Slides				Preparing the structure of SRS document (based on student's assignment)		
21	Writing excellent requirements - Characteristics of excellent requirements - Guidelines for writing requirements - Sample requirements, before and after	Offline	LO5	T,U	Chapter 11 + Slides				Write SRS document based on guidelines		
22	A picture is worth 1024 words - Data flow diagram; Swimlane diagram; State-transition diagram and state table ; Dialog map ;	Offline	LO5	T,U	Chapter 12 + Slides				Write SRS document based on guidelines		
23	A picture is worth 1024 words (con't) - Decision tables and decision trees;	Offline	LO5	T,U	Chapter 12 + Slides				Write SRS document based on guidelines		
24	A picture is worth 1024 words (con't) - Event-response tables ; Modeling on agile projects	Offline	LO5	T,U	Chapter 12 + Slides				Write SRS document based on guidelines		
25	Specifying data requirements - Modeling data relationships - The data dictionary	Offline	LO5	T,U	1.Guidance for Data Dictionaries.docx 2.Chapter 13 +Slides				Finish Data Dictionaries of Assignment		
26	Specifying data requirements (cnt) - Data analysis - Specifying reports	Offline	LO5	T,U	1.Guidance for Data Dictionaries.docx 2.Chapter 13 +Slides				Finish Data Dictionaries of Assignment		
27	Beyond functionality - Software quality attributes - Exploring quality attributes - Defining quality requirements - Specifying quality requirements with Planguage	Offline	LO5	T,U	Chapter 14 + Slides				Finish Data Dictionaries of Assignment		
28	Beyond functionality (cnt) - Quality attribute trade-offs - Implementing quality attribute requirements - Constraint - Handling quality attributes on agile projects	Offline	LO5	T,U	Chapter 14 + Slides				Finish Data Dictionaries of Assignment		

29	Risk reduction through prototyping - Prototyping: What and why - Mock-ups and proofs of concept - Throwaway and evolutionary prototypes - Paper and electronic prototypes	Offline	LO8	T,U	Chapter 15 + Slides				Finish Requirements Prioritization worksheet		
30	Risk reduction through prototyping (cnt) - Working with prototypes - Prototype evaluation - Risks of prototyping - Prototyping success factors	Offline	LO8	T,U	Chapter 15 + Slides				Finish Requirements Prioritization worksheet		
31	First things first: Setting requirement priorities - Why prioritize requirements? - Some prioritization pragmatics - Games people play with priorities	Offline	LO2	T,U	1. Requirements Prioritization Spreadsheet.docx 2. Chapter 16 + Slides				Finish Requirements Prioritization worksheet		
32	First things first: Setting requirement priorities (cnt) - Some prioritization techniques - Prioritization based on value, cost, and risk	Offline	LO2	T,U	1. Requirements Prioritization Spreadsheet.docx 2. Chapter 16 + Slides				Finish Requirements Prioritization worksheet		
33	Validating the requirements - Validation and verification - Reviewing requirements - Prototyping requirements	Offline	LO3	T	1. Requirements Review Checklist.docx 2. Chapter 17 +Slides				Check progress of Assignment's requirements		
34	Validating the requirements - Testing the requirements - Validating requirements with acceptance criteria	Offline	LO3	T	1. Requirements Review Checklist.docx 2. Chapter 17 +Slides				Check progress of Assignment's requirements		
35	Exercises (can be interspersed with the lecture)	Offline	LO3, LO5	I,T,U	1. Chapter 18 + 19 2. Requirements Estimation Tool.xlsx +Slides				Do requirements estimation		
36	Discuss and/or present on Chapter 6	Offline	LO3, LO5	I,T,U	1. Chapter 18 + 19 2. Requirements Estimation Tool.xlsx +Slides				Do requirements estimation		

37	Requirements reuse - Why reuse requirements? - Dimensions of requirements reuse - Types of requirements information to reuse - Common reuse scenarios - Requirement patterns - Tools to facilitate reuse - Making requirements reusable - Requirements reuse barriers and success factors	Offline			1. Chapter 18 2. Requirements Estimation Tool.xlsx +Slides						
38	Beyond requirements development - Estimating requirements effort - From requirements to project plans,designs and code, tests, success Review the first half of assignment and evaluation	Offline	LO2,LO3,LO5,LO7,LO8		1. Chapter 189 Assignment documents				Oral test	Evaluate project output of student teams	
39	Review the first half of assignment and evaluation	Offline	LO2,LO3,LO5,LO7,LO8		Assignment documents Assignment document templates				Oral test	Evaluate project output of student teams	
40	Progress test 2 and Review - Review LAB	Offline	LO2,LO3,LO5,LO7,LO8		LSM questions				Quiz test	Evaluate LAB output of individual student	
41	Agile projects - Limitations of the waterfall - The agile development approach - Essential aspects of an agile approach to requirements - Adapting requirements practices to agile projects - Transitioning to agile: Now what?	Offline	LO4	I,T,U	Chapter 20+Slides						

42	Enhancement and replacement projects - Expected challenges - Requirements techniques when there is an existing system - Prioritizing by using business objectives - When old requirements don't exist - Encouraging new system adoption	Offline	LO4	I,T,U	Chapter 21 +Slides						
43	Packaged solution projects - Requirements for selecting packaged solutions - Requirements for implementing packaged solutions - Common challenges with packaged solution	Offline	LO4	I,T,U	1. Chapter 22 2. Request for Proposal Template.docx 3. Slides				Read and understand the proposal template (what are contents and the purpose of these ones)		
44	Outsourced projects - Appropriate levels of requirements detail - Acquirer-supplier interactions - Change management - Acceptance criteria	Offline	LO4	I,T,U	1. Chapter 23 2. Request for Proposal Template.docx 3. Slides				Read and understand the proposal template (what are contents and the purpose of these ones)		
45	Group discussion Summary and Exercises	Offline			1. Chapter 24 + 25 + Slides				Read and understand the proposal template (what are contents and the purpose of these ones)		
46	Group discussion (cnt) Summary and Exercises (cnt)	Offline			1. Chapter 24 + 25 + Slides				Read and understand the proposal template (what are contents and the purpose of these ones)		
47	Assignment supporting	Offline			1. Chapter 26 + Slides				Checking SRS document		
48	Assignment supporting (cnt)	Offline			1. Chapter 26 + Slides				Checking SRS document		
49	Requirements management practices - Requirements management process - The requirements baseline - Requirements version control - Requirement attributes	Offline	LO4	I,T,U	1. Chapter 25 + 26 + 27 2. a. CCB Charter Template.docx b. Change Control Process.docx c. Impact Analysis Checklist.docx 3. Slides				Do assignment - based on guidelines		

50	Requirements management practices (cnt) - Tracking requirements status - Resolving requirements issues - Measuring requirements effort - Managing requirements on agile projects	Offline	LO4	I,T,U	1. Chapter 25 + 26 + 27 2. a. CCB Charter Template.docx b. Change Control Process.docx c. Impact Analysis Checklist.docx 3. Slides				Do assignment - based on guidelines		
51	Change happens - Change control policy - Basic concepts of the change control process - A change control process description - The change control board	Offline	LO9	I,T,U	1. Chapter 25 + 26 + 27 2. a. CCB Charter Template.docx b. Change Control Process.docx c. Impact Analysis Checklist.docx 3. Slides				Do assignment - based on guidelines		
52	Change happens (cnt) - Change control tools - Measuring change activity - Change impact analysis - Change management on agile projects	Offline	LO9	I,T,U	1. Chapter 25 + 26 + 27 2. a. CCB Charter Template.docx b. Change Control Process.docx c. Impact Analysis Checklist.docx 3. Slides				Do assignment - based on guidelines		
53	Links in the requirements chain - Tracing requirements - Motivations for tracing requirements - The requirements traceability matrix	Offline	LO9	I,T,U	1. Chapter 25 + 26 + 27 2. a. CCB Charter Template.docx b. Change Control Process.docx c. Impact Analysis Checklist.docx 3. Slides				Do assignment - based on guidelines		
54	Links in the requirements chain (cnt) - Tools for requirements tracing - A requirements tracing procedure	Offline	LO9	I,T,U	1. Chapter 25 + 26 + 27 2. a. CCB Charter Template.docx b. Change Control Process.docx c. Impact Analysis Checklist.docx 3. Slides				Do assignment - based on guidelines		

55	Tools for requirements engineering (self-study) Improving your requirements processes - How requirements relate to other project processes - Requirements and various stakeholder groups - Gaining commitment to change - Fundamentals of software process improvement - Root cause analysis - The process improvement cycle - Requirements engineering process assets - Creating a requirements process improvement road map	Offline	LO8, LO9	ITU	1. Chapter 31 2. Action Plan Template.docx 3. Risk Management Plan Template.docx 4. Slides				Finish assignment's documents	Evaluate project output of student teams	
56	Software requirements and risk management - Fundamentals of software risk management - Requirements-related risks - Risk management is your friend	Offline	LO8, LO9	ITU	1. Chapter 32 2. Action Plan Template.docx 3. Risk Management Plan Template.docx 4. Slides				Finish assignment 's documents	Evaluate project output of student teams	
57	Progress test 3	Offline	LO4,LO8,LO9		LSM questions				Quiz test		
58	Assignment evaluation	Offline	All LOs		Assignment documents				Oral test		
59	Assignment evaluation	Offline	All LOs		Assignment documents				Oral test		
60	Assignment evaluation	Offline	All LOs		Assignment documents				Oral test		

0 Constructive question(s)

5 assessment(s)

Category	Type	Part	Weight	Completion Criteria	Duration	CLO	Question Type	No Question	Knowledge and Skill	Grading Guide	Note
Assignment	on-going	1	20.0%	>0	Option 1: 26 slots ; Option 2 (For Constructivism Approach only): Follow lecturer's proposal	LO1, LO2, LO3, LO4, LO5, LO6, LO7, LO8	Option 1: Teacher raise projects, students practice step by step to complete their assignments. Student could base on study guide COS_Document_Example to do assignments. Option 2 (For Constructivism Approach only): Follow lecturer's proposal	Option 1: Depending on questions in assignment Option 2 (For Constructivism Approach only): Follow lecturer's proposal	All subjects in syllabus	in class, by teacher	

LAB	on-going	1	10.0%	>0	Option 1: 26slots/each Option 2 (For Constructivism Approach only): Follow lecturer's proposal	LO5	1. Model 1 Context diagram based on the topic of assignment. 2. Model 1 Swimlane diagam based on the topic of assignment. 3. Model 1 State diagam based on the topic of assignment.	Option 1: Depending on questions in assignment Option 2 (For Constructivism Approach only): Follow lecturer's proposal	Chapter 5, Chapter 12	In class, by teacher	The output of LAB: draw 1 Context diagram, 1 Swimlane diagram and 1 State diagram. These diagrams will be drawn by individuals and will be presented by each student at week 7. After presenting LAB, the student will put these diagrams on his or her Assignment document.
Progress Test	on-going	3	20.0%	>0	Option 1: 30'/each; Option 2 (For Constructivism Approach only): Follow lecturer's proposal	LO1, LO2, LO3, LO4, LO5, LO6, LO7, LO8, LO9	Option 1: Multiple choices Marked by Computer or a suitable format; Option 2 (For Constructivism Approach only): Follow lecturer's proposal	Option 1: 30/each; Option 2 (For Constructivism Approach only): Follow lecturer's proposal	Test 1: Chapter 1-> Chapter 9 Test 2: Chapter 10 -->20 Test 3: Chapter 21 --->32	in class, by LMS system	
PE	final exam	1	25.0%	4	90' (85' for assignment + 5' for exam submission)	LO1, LO2, LO3, LO4, LO5, LO7, LO8, LO9			All subjects in syllabus	LSM system	Customized from the Assignment or projects that students have learned
TE	final exam	1	25.0%	4	60'/each	LO1, LO2, LO3, LO4, LO5, LO6, LO7, LO8, LO9	Multiple choicesMarked by Computer	60	All subjects in syllabus	LSM system	