Course Specification

— (Bachelor)

Course Title: Requirements Engineering 1

Course Code: SE1002

Program: Software Engineering

Department: Software Engineering

College: Computing and Information

Institution: Al-Baha University

Version: V1

Last Revision Date: 24-4-2024

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (3)

2. Course type

A.	☐University	☐College	☒ Department	☐Track	☐Others
B.	☐ Required			☐Elective	

3. Level/year at which this course is offered: (5ᵗʰ /2ⁿᵈ year)

4. Course general Description:

This course introduces the main concepts and theories of requirements engineering including the followings: requirements Engineering Process - Elicitation of requirements - Functional and non-functional requirements - System services and constraints – Quality of Requirements - Requirements traceability matrix - Metrics for non-functional requirements - Use case description - Use case and context diagrams - Software Requirements Specification –IEEE Standard - Requirements for agile developments - Requirements for various systems: embedded systems, web-based systems, business systems, etc. – Requirements management tools.

5. Pre-requirements for this course (if any): SE1001 Foundations of Software Engineering

6. Pre-requirements for this course (if any): None

7. Course Main Objective(s):

One of the main challenges in software development is to make sure developer is developing the right system, i.e. to understand the requirements that need to be fulfilled. The main focus of this course is how to find and collect requirements from relevant sources both at the start and during a software development project. Different methods for this ,as well as, different underlying principles and formats for documenting and maintaining requirements will be covered.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	3	100%
2	E-learning		

No	Mode of Instruction	Contact Hours	Percentage
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	33
2.	**Laboratory/Studio**	
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
Total		33

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Identify the main concepts of requirement engineering in softwareproject.	K1	Lecture, exercise, and group discussion	Quiz, Mid exams, Final exam examassignments
1.2	Discuss the importance of requirement in successful software engineering.	K2	Lecture, exercise, and group discussion	Quiz, Mid exams, Final exam assignments
1.3	Define the importance of identifying stakeholders and their goals.	K2	Lecture, exercise, and group discussion	Quiz, Mid exams, Final exam assignments

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.4	Describe the challenges involved in requirements engineering.	K2	Lecture, exercise, and group discussion	Quiz, Final exams, assignments
2.0	**Skills**			
2.1	Manage elicitation of software requirements.	S1	Lecture, Group discussion.	Final Exams, assignments, project.
2.2	Analyse software requirements documentation according to industry standards.	S2	Lecture, Group discussion	FinalExams, assignments, project.
2.3	Estimate current requirements engineering practices in a software project or a software development company.	S3	Lecture, Group discussion	Final Exams, assignments, project.
3.0	**Values, autonomy, and responsibility**			
3.1	Demonstrate responsibility, ethics, and effective teamwork	V1	Project, Discussion	Project
...				

C. Course Content

No	List of Topics	Contact Hours
1.	Software requirements fundamentals	3
2.	Requirement process	3
3	Requirements elicitation	3

4	Writing requirements and requirements specifications	6
5	Software requirement elaboration	3
6	Prioritising requirements	3
7	Alignment between requirements engineering and other software engineering activities	3
8	Requirements engineering in In-Project vs. market-driven development	3
9	Software requirement validation	6
Total		

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quizzes	9	10%
2.	Assignments	4,6,9	10%
3.	Group Project	10	10%
4.	Midterm Exam	6	20%
4	Final Exam	12	50%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Namisanvu, R.K., 2020. *Requirements Engineering that BalancesAgility of Teams and System-level Information Needs at Scale*. Chalmers Tekniska Hogskola (Sweden).
Supportive References	Lauesen, S 2017, *Guide to Requirements SL-07 version 5: Problem-oriented requirements v5*. 5 edn, Lauesen Publishing.
Electronic Materials	**N/A**
Other Learning Materials	**N/A**

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom and Blackboard

Items	Resources
Technology equipment (projector, smart board, software)	Data show and software
Other equipment (depending on the nature of the specialty)	N/A

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	• Students • Faculty • Peer Reviewers • Program Leader Course Coordinator	• Surveys (indirect). • Direct feedback from students. • Course evaluation by Peer Reviewers (indirect). • Class visit by Program Leader (indirect) Comprehensive Course report (where we can find information about teaching difficulties and action plan, …)
Effectiveness of Students assessment	• Students • Faculty • Peer Reviewers • Program Leader • Exam Evaluation Committee Course Coordinator	• Surveys (indirect). • Direct feedback from students. • Course evaluation by Peer Reviewers (indirect). • Class visit by Program Leader (indirect) Exam evaluation by the Exam Evaluation Committee (indirect)
Quality of learning resources	• Students • Faculty • Peer Reviewers Course Coordinator	• Surveys (indirect) • Course evaluation by Peer Reviewers (indirect). Comprehensive Course report (where we can find information about difficulties and challenges about learning resources as well as consequences and action plan, …)
The extent to which CLOs have been achieved	• Faculty • Program Leader Course Coordinator	• Student Results (direct) Comprehensive Course report (where we can find the CLO assessment results)
Other	None	None

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Curriculum Committee
REFERENCE NO.	
DATE	28 April 2024