



Course Specification

(Postgraduate Programs)

Course Title	Software Requirement Engineering
Course Code:	MSCS 722
Program:	Master Programme in Computer Science
Department:	Computer Science
College:	Computer Science and Information Technology
Institution:	King Faisal University
Version:	Course Specification Version Number
Last Revision Date:	Pick Revision Date.

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A. General information about the course:

1. Course Identification:

1. Credit hours: 3 (3-0-6)

2. Course type

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

3. Level/year at which this course is offered: : Level 2 , 3 or 4

4. Course General Description:

The requirements engineering process, including identification of stakeholders, requirements elicitation techniques such as interviews and prototyping, analysis fundamentals, requirements specification, and validation. Use of Models: State-oriented, Function-oriented, and Object-oriented. Documentation for Software Requirements. Informal, semi-formal, and formal representations. Structural, informational, and behavioral requirements. Use of requirements repositories to manage and track requirements through the life cycle. Case studies, software projects, written reports and oral presentations will be required..

5. Pre-requirements for this course (if any):

NA

6. Pre-requirements for this course (if any):

NA

7. Course Main Objective(s):

This course aims to develop/enhance skills towards understanding why user needs are so hard to express, capture and understand. It will enable the student to compare Software Engineering life cycle and Requirements Engineering (RE) Process. Enrich their understanding and rationale behind software requirement and how requirements engineering fits into a broader context of systems development life cycle. It prepares students with recent elicitation techniques, specify requirements using requirements templates and modeling techniques, validate and prototype requirements, negotiate and prioritize requirements, and manage changing requirements. The course also discuss in depth the research challenges and future trends in the field of Requirements Engineering.

2. Teaching Mode: (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom		





No	Mode of Instruction	Contact Hours	Percentage
2	E-learning		
3	Hybrid <ul style="list-style-type: none"> Traditional classroom E-learning 	45	100%
4	Distance learning		

3. Contact Hours: (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	45
2.	Laboratory/Studio	-
3.	Field	-
4.	Tutorial	-
5.	Others (specify).....	-
	Total	45

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

Code	Course Learning Outcomes	Code of PLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Recognize the rationale behind software requirements and requirements engineering process.	K1	Lectures	- Quizzes - Exams - Assignments
2.0	Skills			
2.1	Elicit software requirements in context of software system development	S1	- Lectures	- Quizzes - Exams - Assignments
2.2	Identify stakeholders and work with them effectively in a team oriented way	S2	- Lectures	- Quizzes - Exams - Assignments
3.0	Values, autonomy, and responsibility			



Code	Course Learning Outcomes	Code of PLOs aligned with program	Teaching Strategies	Assessment Methods
3.1	Apply a range of elicitation & analysis techniques, specify requirements using requirements templates, modeling techniques, validate and prototype requirements, negotiate and prioritize requirements, and manage changing requirements	V1	- Lectures - Case studies - Research assignment	Project Report and Presentation
...				

C. Course Content:

No	List of Topics	Contact Hours
1	Overview of Software Engineering / Software Processes	3.0
	Introduction to Requirements Engineering	
2 & 3	Software Requirements (Concept, Types) Software Requirements Document	6.0
4	Requirements Engineering Processes	3.0
5 & 6	Requirements Elicitation and Analysis	6.0
7	Requirements Validation	3.0
8	Requirements Management	3.0
9	Methods for Requirements Engineering System Models	6.0
10	Non-functional Requirements	6.0
11	Goal-Oriented Requirements Engineering (GORE)	3.0
12	Requirements Evolution	3.0
13	Requirements Engineering Tools Overview Recent Trends in Requirements Engineering Research	3.0
Total		45



D. Students Assessment Activities:

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Assignments	Continuous	10%
2.	Quiz	Continuous	10%
3.	Mid Term	8 th - 9 th	25%
4	Capstone Project	15 th	15%
5	Final Exam	16 th - 17 th	40%

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

E. Learning Resources and Facilities:

1. References and Learning Resources:

Required Textbook	"Software Engineering: A Practitioner's Approach", Roger S. Pressman and Bruce R. Maxim, McGraw-Hill Education; 8 edition (January 23, 2014) ISBN-13: 978-0078022128.
Essential References	<ul style="list-style-type: none"> • <i>Fundamentals of Software Engineering</i>", Carlo Ghezzi, Mehdi Jazayeri, Dino Mandrioli, Prentice Hall Copyright: (2003), ISBN: 0-13-305699-6 • "<i>Software Engineering</i>", Roger S. Pressman, 10th Edition, McGraw-Hill, (2015).
Supportive References	
Electronic Materials	<ul style="list-style-type: none"> • IEEE/ACM Journal / Conference Papers on Software Engineering
Other Learning Materials	<ul style="list-style-type: none"> • Electronic Materials, Web Sites etc. for any recent resources related to Advanced Topics in Software Engineering

2. Educational and Research Facilities and Equipment Required:

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Sufficient seats (typically 20) as per student registration required in the lecture
Technology equipment (Projector, smart board, software)	Sufficient computer terminals with required setup having the necessary software installed and configured for the students to complete assignments and projects. Data show is needed to demonstrate in the class
Other equipment (Depending on the nature of the specialty)	Not Required

F. Assessment of Course Quality:

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Indirect Assessment through Teaching Evaluation
Effectiveness of students' assessment	Faculty	Indirect assessment through Course Evaluation Survey
Quality of learning resources	Students	Indirect Assessment through Learning Resources Survey
The extent to which CLOs have been achieved	Faculty	Direct assessment through Rubrics analyses
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval Data:

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	

