هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد NCAAA T4 2020

Course Specifications

Course Title:	Software Engineering
Course Code:	**CS 312**
Program:	**Computer Science**
Department:	**Computer Science**
College:	**College of Computer and Information Science**
Institution:	**Majmaah University**

Table of Contents

A. Course Identification

1. Credit hours: (3+0+1)	
2. Course type	
a. University ☐ College ☐ Department ☒ Others ☐	
b. Required ☒ Elective ☐	
3. Level/year at which this course is offered: Level 7	
4. Pre-requisites for this course (if any)**:** N/A	
5. Co-requisites for this course (if any)**:** N/A	

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	44	100%
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	40
2	**Laboratory/Studio**	10
3	**Tutorial**	5
4	**Others** (specify)	
	Total	

B. Course Objectives and Learning Outcomes

1. Course Description

This is a reading and discussion subject on issues in the engineering of software systems and software development project design. It includes the present state of software engineering, what has been tried in the past. Topics may differ in each offering but will be chosen from: the software process and lifecycle; requirements and specifications; design principles; formal analysis, and reviews; quality management and assessment; product and process metrics; COTS and reuse; evolution and maintenance; team organization and people management; and software engineering aspects of programming languages.

2. Course Main Objective

1 Understand the activities that are involved in the software development
2 Discuss various software process models
3 Explain the concepts of architectural design and detailed design
4 Understand the notation of Unified Modeling Language for modeling requirements
5 Describe the process of various testing techniques

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Understand the activities that are involved in the software development	K1
1.2	Discuss various software process models	K1, S1
1.3	Explain the concepts of architectural design and detailed design	S2
1...		
2	**Skills :**	
2.1	Understand the notation of modelling using Unified Modelling Language	S2, S3, S4, V1
2.2	Describe the process of various testing techniques.	K1, S2
2.3	Understand the process of software project management	V1, V2
2...		
3	**Values:**	
3.1		
3.2		
3.3		
3...		

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to Software Engineering	6
2	Requirements Engineering	10
3	Software and project metrics	6
4	Software processes	6
5	Software project management	7
6	Software quality assurance	10
7	Unified Modeling Language (UML)	10
Total		55

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
1.1	Understand the activities that are involved in the software development		Quiz, Mid and Final Exams
1.2	Discuss various software process models		Quiz, Mid and Final Exams
1.3	Explain the concepts of architectural design and detailed design		Quiz, Mid and Final Exams, Project
2.0	**Skills**		
2.1	Understand the notation of modelling using Unified Modelling Language		Exercises, Group Project, Mid
2.2	Describe the process of various testing techniques.		Quiz, Mid and Final Exams

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.3	Understand the process of software project management		Quiz, Mid and Final Exams
3.0	**Values**		
3.1			
3.2			
…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Midterm Exam	8	20
2	Project	9	15
3	Homework and Assignments	5, 9	10
4	Quiz	4,8	10
5	Participation	1-9	5
6	Final Exam	11	40
7			
8			

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Ian Sommerville, "Software Engineering", Addison Wesley; 9th ed. (March 2010). ISBN-10: 0137035152, ISBN-13: 978-0137035151
Essential References Materials	ITimothy Lethbridge, Robert laganiere, "Object-Oriented Software Engineering: Practical Software Development using UML and Java", Mc Graw Hill;2nd ed. (December 2004). ISBN-10: 0077109082, ISBN-13: 978-0077109080
Electronic Materials	
Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation	Classroom, Computer Lab

Item	Resources
(Classrooms, laboratories, demonstration rooms/labs, etc.)	
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show, UML design software (Visual Paradigm)
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Attainment of CLO	Instructor, TA	Performance in the exam for a particular CLO(s)
Quality of learning resources	Convener , instructors, HOD	Regular follow ups

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	
Reference No.	
Date	