هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد NCAAA T4 2020

Course Specifications

Course Title:	Software Engineering
Course Code:	501343-3
Program:	**Bachelor in Computer Science**
Department:	**Department of Computer Science**
College:	**College of Computers and Information Technology**
Institution:	**Taif University**

Table of Contents

A. Course Identification

1. Credit hours: 3
2. Course type **a.** University ☐ College ☐ Department ☑ Others ☐ **b.** Required ☑ Elective ☐
3. Level/year at which this course is offered: 9/3
4. Pre-requisites for this course (if any)**: Data Structures 501324-3**
5. Co-requisites for this course (if any)**: None**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	5	100%
2	**Blended**	0	0
3	**E-learning**	0	0
4	**Distance learning**	0	0
5	**Other**	0	0

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	50
2	**Laboratory/Studio**	0
3	**Tutorial**	0
4	**Others** (specify)	0
	Total	50

B. Course Objectives and Learning Outcomes

1. Course Description

Introduce different aspects of software development for reliable systems. Study the software development process models, project management techniques, modelling notations, requirement analysis, architecture design methods, and testing techniques.

2. Course Main Objective

Understand various software engineering paradigms and metrics to assess quality of the various processes in software engineering from inception till retirement of the software.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Describe the Software Development Life Cycles.	K1
1.2	Recognize engineering process requirements.	K1
2	**Skills :**	
2.1	Choose a suitable software model to use in software development.	S2
2.2	Apply the process of analysis and design using the object-oriented approach.	S2
3	**Values:**	
3.1	Prepare technical documentation for a software project.	V3
3.2	Work in teams on a software development project	V3

C. Course Content

No	List of Topics	Contact Hours
1	Software Engineering introduction	6
2	Software Processes (Software process models, process activities, The RUP)	8
3	Agile Software Development (Agile methods, plan-driven and agile development, extreme programming, agile project management, scaling agile methods)	8
4	Software Requirements and Specifications (Requirement specifications, Requirement engineering process, Requirements elicitation and analysis, Requirement validation, and requirement management)	8
5	Software Prototyping	6
6	Software Design	6
7	Software Modeling (Context models, Interaction models, Structural models, Behavioral model, Model-driven engineering)	8
Total		50

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 and describe the Software Development Life Cycles.	Lecture Discussion	**Direct** Written Exams Assignments Quizzes Project **Indirect** Course exit survey
1.2	Understand engineering process requirements.	Lecture Discussion	**Direct** Written Exams Assignments

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
			Quizzes Project **Indirect** Course exit survey
2.0	**Skills**		
2.1	Choose a suitable software model to use in software development.	Lecture Tutorial Discussion	**Direct** Written Exams Assignments Quizzes Project **Indirect** Course exit survey
2.2	Apply the process of analysis and design using the object-oriented approach.	Lecture Tutorial Discussion	**Direct** Written Exams Assignments Quizzes Project **Indirect** Course exit survey
3.0	**Values**		
3.1	Prepare technical documentation for a software project.	Lecture Tutorial Discussion	**Direct** Assignments Quizzes Project **Indirect** Course exit survey
3.2	Work in teams on a software development project	Lecture Tutorial Discussion	**Direct** Assignments Quizzes Project **Indirect** Course exit survey

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Assignments	10	10%
2	Quizzes	6	10%
3	Midterm Exam	6	25%
4	Project	10	15%
6	Final Exam	12	40%

***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:

Academic advising and counseling of students is an important component of teaching; student academic advising is a mandatory requirement of College of Computers and Information Technology (CCIT). Appropriate student advising provides support needed for the student during times of difficulty. In addition, it helps the student to build a close relationship with his/her advisor and to provide student motivation and involvement with the institution.

In addition, since faculty are usually the first to recognize that a student is having difficulty, faculty members play a key role in developing solutions for the students or referring them to appropriate services. Faculty members also participate in the formal student-mentoring program.

Additional counseling is provided by course directors, who provide students with academic reinforcement and assistance and refer “at risk” students to the Vice Dean for Academic Affairs and the Vice Dean for female section.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Sommerville, I., Software Engineering, latest Edition
Essential References Materials	Pressman, & Roger S. & Ice, Darrel, Software Engineering a Practitioner's Approach: European Adaptation latest Edition
Electronic Materials	Presentations and recorded lectures
Other Learning Materials	NON

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	A Lecture room appropriate for maximum 25 students with a personal computer, a data show, and a smart board.
Technology Resources (AV, data show, Smart Board, software, etc.)	data show, UML editor software, Prototyping software tool and Project management software.
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
Effectiveness of Teaching	Students	Students surveys and Students course evaluation ●
Improvement of Teaching	Course Coordinator	deficiencies based on the student Evaluation, faculty input, course file, and program assessment
Verifying Standards of Student Achievement	Curriculum Committee	● Review CAF (Course assessment file) ● Alumni surveys. Periodic exchange and remarking of tests or a sample of assignments with staff at another

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	CS council
Reference No.	Meeting #12
Date	23-10-1443