2023
TP-153

Course Specification
(Bachelor)

Course Title:	Software Maintenance & Evaluation
Course Code:	SE1756
Program:	Bachelor of Software Engineering
Department:	Software Engineering
College:	Faculty of Computers and Informatics
Institution:	Al-Baha University
Version:	1.0
Last Revision Date:	23/4/2024

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: (10)					
4. Course general Description:					
This course provides a broad introduction on software Maintenance. Types of Maintenance, such as corrective, adaptive, perfective, and preventive maintenance, will be studied. In addition, Maintenance Processes throughout the lifecycle of software development will be addressed in this course. Additionally, maintenance process models, such as Boehm, Osborne, Iterative enhancement and reuse-oriented, will be studies. Furthermore, other related topics are included in this course such as Maintenance Cost Estimation, Program Comprehension, Reengineering, Reverse engineering, Migration. In the second part of this course, the concepts of Software Configuration Management (SCM) will be discussed. This includes the topics of Configuration identification, control, auditing, releases management. Finally, several CASE tools of Software Maintenance and 4 Configuration will be used to allow students to explore approaches that facilitate Software Maintenance and Configuration.					
5. Pre-requirements for this course (if any)**:**					
Software Testing (SE1504)					
6. Pre-requirements for this course (if any)**:**					
7. Course Main Objective(s):					
The main aim of this course is to teach the students the concepts of Software Maintenance and Configuration. This includes Software Maintenance and Configuration types, processes, models. In addition, students will be able to					

employ several CASE tools that facilitate Software Maintenance and Configuration.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	4	100%
2	E-learning	0	0
3	Hybrid • Traditional classroom • E-learning	0	0
4	Distance learning	0	0

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	33
2.	**Laboratory/Studio**	0
3.	**Field**	0
4.	**Tutorial**	11
5.	**Others (specify)**	0
Total		44

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	**Recognize the concepts of Software Maintenance and Configuration and**	**K1**	**Lecture, exercise**	**Quizzes, Exams, Assignments**

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	their types, processes, models			
1.2	Define knowledge of related topic to Software Maintenance and Configuration.	K2	Lecture, exercise	Quizzes, Exams, Assignments
1.3	Recognize challenges in Software Maintenance and Configuration	K3	Lecture, exercise	Quizzes, Exams, Assignments
2.0	**Skills**			
2.1	Apply Software Maintenance and Configuration fundamentals and terminology	S1	Lecture, Group discussion, tutorials	Exams, assignments, project
2.2	Design and manage Software Maintenance and Configuration plans for software systems for considerable software size	S2	Lecture, Group discussion, tutorials	Exams, assignments, project
2.3	Apply reporting and presentation on a Software Maintenance and Configuration	S3	Lecture, Group discussion, tutorials	Exams, assignments, project
3.0	**Values, autonomy, and responsibility**			
3.1	Demonstrate effective teamwork	V1	Project	Assignment, project

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction on software Maintenance	3
2.	Maintenance Types	3

3.	Maintenance Processes	3
4.	Maintenance Models	4
5.	Maintenance Related topics: Maintenance Cost Estimation, Program Comprehension, Re-engineering, Reverse engineering, Migration	6
6.	Introduction on Software Configuration Management (SCM)	4
7.	Software Configuration identification, control, auditing, releases management	6
8.	CASE tools of Software Maintenance and Configuration	4
Total		33

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Assignments and Quizzes	2,4,6,8	15%
2.	Group Project	10	15%
3.	Midterm Exam	5	20%
3.	Final Exam	11	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	Bourque, P., and R. E. Fairley. "Guide to the software engineering body of knowledge, Version 3.0 (SWEBOK Guide V3. 0), IEEE CS." (2014).
Supportive References	April, Alain, and Alain Abran. Software maintenance management: evaluation and continuous improvement. John Wiley & Sons, 2012.
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
Technology equipment (projector, smart board, software)	Data Show

Items	Resources
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Student	- Survey
Effectiveness of Students assessment	Lecturer	- Annual report
Quality of learning resources	Program Coordinator	- Survey - Evaluation of test Models - Standard sample
The extent to which CLOs have been achieved		
Other		

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