هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title:	**Systems Analysis and Design 2**
Course Code:	**IS1252**
Program:	**Computer Information Systems**
Department:	**Computer Information Systems**
College:	**Computer Science & Information Technology**
Institution:	**Al-Baha University**
Version:	**T104 – V2**
Last Revision Date:	**May 25, 2023**

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A. General information about the course:

Course Identification					
1. Credit hours:	4 Credit Hours (4, 0, 0) (Lecture, Lab, Tutorial) (4 Contact Hours)				
2. Course type					
a.	University ☐	College ☐	Department☒	Track☐	Others☐
b.	Required ☒	Elective☐			
3. Level/year at which this course is offered:			5th level/ 2nd Year		
4. Course general Description The course in advanced system analysis and design is designed to build upon the foundational knowledge and skills gained in System Analysis and Design 1. The focus of this course is to help students gain deep knowledge and good skills in analyzing, designing, and implementing different systems. The students will explore more advanced topics such as software process models, object-oriented analysis and design, systems implementation, and systems support and security. By the end of the course, students will be well-equipped to design and develop complex software systems that meet the needs of businesses and organizations. They will also have a deep understanding of software testing principles and methodologies.					
5. Pre-requirements for this course: IS1003-Systems Analysis and Design 1					
6. Co- requirements for this course (if any): None					
7. Course Main Objective(s) The main objectives of this course are to: • Describe the different software process models. • Recognize the concepts and use of object-oriented analysis and design. • Demonstrate the use of UML to describe object-oriented systems using structural and behavioral UML diagrams. • Develop skills in managing systems implementation throughout the system's useful life. • Develop skills in managing systems support and security throughout the system's useful life. • Work effectively in teams to design and develop software solutions that meet the needs of businesses and organizations.					

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	40	%100
2.	E-learning		
3.	Hybrid • Traditional classroom • E-learning		
4.	Distance learning		

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	40
2.	Laboratory/Studio	-
3.	Field	-
4.	Tutorial	-
5.	Others (meetings with supervisors which can be through a Learning management System - LMS (e.g., Rafid))	-
	Total	40

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	Describe the different software process models.	K1	– Lectures – Class discussions	***Direct Assessment Tool*** • Midterm • Final exam ***Indirect Assessment Tool*** • Course Exit Survey
1.2	Recognize the concepts and use of object-oriented analysis and design.	K2	– Lectures – Class discussions	***Direct Assessment Tool*** • Midterm ***Indirect Assessment Tool*** Course Exit Survey
2.0	Skills			
2.1	Use UML to describe object-oriented systems, including use case modeling and diagrams, activity diagrams, sequence diagrams, communication diagrams, state machine diagrams, class diagrams, object diagrams, and component diagrams.	S2	– Lectures – Assignments – Projects – Class discussions	***Direct Assessment Tool*** • Homework • Midterm • Project Presentation and Report (use Rubric) • Final exam ***Indirect Assessment Tool*** • Course Exit Survey
2.2	Explore the different activities of managing systems implementation involving application development, coding, testing, and documentation.	S2	– Lectures – Assignments – Projects – Class discussions	***Direct Assessment Tool*** • Homework • Project Presentation and Report (use Rubric) • Final exam ***Indirect Assessment Tool*** • Course Exit Survey
2.3	Illustrate the different systems support and security tasks that continue throughout the system's useful life.	S2	– Lectures – Assignments – Class discussions – Self-learning exercises	***Direct Assessment Tool*** • Homework • Final exam ***Indirect Assessment Tool*** • Course Exit Survey
2.4	Communicate effectively and work collaboratively in designing and developing a small software solution.	S6	– Teamwork	***Direct Assessment Tool*** • Project Report (Rubric) ***Indirect Assessment Tool*** Course Exit Survey
3.0	Values, autonomy, and responsibility			
3.1	Work effectively in teams to design and develop a small software solution.	V1	– Teamwork	***Direct Assessment Tool*** • Project Presentation (Rubric) ***Indirect Assessment Tool*** • Course Exit Survey

C. Course Content

No	List of Topics	Contact Hours
1.	Software Process Models	4
2.	Introduction to Object Oriented Analysis and Design	4
3.	UML Behavioral Diagrams: Use Case Modeling and Diagrams	4
4.	UML Structural Diagram: Class Diagrams, Object Diagrams, and Component Diagrams	6
5.	UML Behavioral Diagrams: Activity Diagrams and Sequence Diagrams	6
6.	UML Behavioral Diagrams: Communication Diagrams and State Machine Diagrams	4
7.	Managing Systems Implementation	4
8.	System Testing and Validation	4
9.	Managing Systems Support and Security	4
Total		40

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Homework Exercises	Periodically	10%
2.	Midterm Exam	Week 6	20%
3.	Project Presentation and Report (Rubrics)	Week 9-10	10%
4.	Final Exam	Week 12	60%

*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	• Dennis, A., Wixom, B. H., & Roth, R. M. (2021). *Systems Analysis and Design*, 8th Edition. John Wiley & Sons. ISBN: 978-1-119-80378-2. • Tilley, S. (2019). *Systems Analysis and Design*. Cengage Learning. • Scott, K., & Fowler, M. (2017). *UML Distilled Second Edition A Brief Guide to the Standard Object Modeling Language*. Addison-Wesley.
Supportive References	• Sommerville, I. (2015). *Software Engineering*. *10th. Book Software Engineering. 10th, Series Software Engineering*. • Jorgensen, P. C. (2018). *Software Testing: a Craftsman's Approach*. CRC press • Freeman, E., & Robson, E. (2020). *Head First Design Patterns*. O'Reilly Media.
Electronic Materials	• Access to the Saudi Digital Library (SDL). • Using the Learning Management System of the university – Rafid System (https://lms.bu.edu.sa/). • Open-source software libraries and frameworks, such as GitHub, Stack Overflow, and Medium
Other Learning Materials	None

2. Required Facilities and equipment

Items	Resources
Facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	• A classroom or lecture hall with whiteboard for 25 students.
Technology equipment (projector, smart board, software)	• A digital image projection system with connection to desktop computer and laptop computer. • High speed Internet connection. • An instructor computer station.
Other equipment (depending on the nature of the specialty)	• None

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 visits 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 visits 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		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	Curriculum Committee Meeting
REFERENCE NO.	
DATE	May 25, 2023