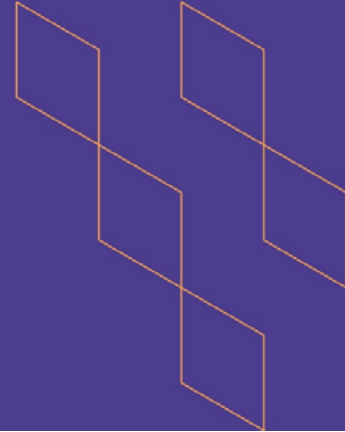




T-104
2022

Course Specification



Course Title:	Software Engineering 1
Course Code:	CS1009
Program:	Computer Science
Department:	Computer Science and Engineering
College:	Computer Science and information technology
Institution:	Albaha University
Version:	<i>Course Specification Version Number</i>
Last Revision Date:	<i>Pick Revision Date.</i>



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A. General information about the course:

Course Identification	
1. Credit hours:	4 Hours
2. Course type	
a.	University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Track <input type="checkbox"/> Others <input type="checkbox"/>
b.	Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered: 6 / 2nd year	
4. Course general Description	
Introduce the student to oriented system design and development. The OOD process takes the conceptual systems model by the use of Unified Modeling Language (UML) language to make design of the system architecture or layout.	
Students will learn the use cases, Class diagram, sequence diagram and other analysis data as input from the OOA phase. This is used in OOD to identify, define and design systems classes and objects, as well as their relationship, interface and implementation.	
5. Pre-requirements for this course (if any): Programming 2 (CS1251).	
6. Co- requirements for this course (if any): none	
7. Course Main Objective(s)	
The main purpose for this course is to teach students how to:	
The main purpose for this course is to teach students how to:	
<ul style="list-style-type: none"> Describe conceptual Models with the Unified Modeling Language (UML) and provides a common, standard notation for recording both analysis models and design artifacts. List and reproduce the principles of the main diagrams of UML. Explain each diagram and justify its use. Analyze and compose necessary diagrams for studies cases (real world cases). Explain the modeling process and demonstrate it in practical assignments. Evaluate and criticize a term project of a medium size. 	

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	44	100%
2.	E-learning		
3.	Hybrid <ul style="list-style-type: none"> Traditional classroom E-learning 		
4.	Distance learning		





2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	44
2.	Laboratory/Studio	-
3.	Field	-
4.	Tutorial	-
5.	Others (specify)	-
	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	Describe the Object Oriented concepts	K1	- Lectures - Discussions	- Homework (rubric) - Midterm - Final exam
1.2	List UML diagrams that illustrate the structure and the dynamic behavior of a system (Class diagrams, sequence diagrams, activity diagrams and state diagrams).	K2	- Lectures - Discussions	- Homework (rubric) - Midterm - Final exam
1.3	Describe UML Use Case diagram notation and style to depict high-level user requirements and be able to write up Use Case Centric Functional Requirements Specifications in a typical commercial system.	K3	- Lectures - Discussions	- Homework (rubric) - Midterm - Final exam
1.4	Recognize the design theory of (class diagram, sequence diagrams, activity diagrams and state diagrams).	K4	- Lectures - Discussions	- Homework (rubric) - Midterm - Final exam
2.0	Skills			
2.1	Demonstrate the fundamentals of Object orientation	S1	- Lectures - Assignments - Demonstration	- Homework (rubric) - midterm - Final exam - Project evaluation form (rubric)
2.2	Recognize the basic concepts, principles, and theories relating to object orientation	S2	- Lectures - Problem based learning - Assignments	- Homework (rubric) - midterm - Final exam - Project evaluation form (rubric)
2.3	Develop and explain the design of the different UML diagrams using case studies.	S3	- Lectures - Problem based learning - Assignments	- Homework (rubric) - midterm - Final exam - Project evaluation form (rubric)
3.0	Values, autonomy, and responsibility			



Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
3.1	Work both independently and collaboratively	V1	- Projects	- Project evaluation form (rubric)
3.2	Interact in concepts and techniques in oral presentations	V2	- Projects	- Project evaluation form (rubric)

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction to Software and Software Engineering	5
2.	Introduction to the Object-Oriented Software Engineering	6
3.	Modeling with UML	7
4.	Requirements Elicitation Use Cases: Concepts, Specifications and Diagrams	7
5.	Object-Oriented and Class diagram, Object interaction diagram, Package Diagram	7
6.	Sequence Diagram, System Sequence Diagram, Analysis Sequence Diagram	7
7.	Commonly used UML state diagrams	5
Total		44

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Homework	Every two Weeks	0%
2.	Midterm	6	20%
3.	Project evaluation form (rubric)	12	10%
4.	Quiz	9	10%
6.	Final Exam	13	0%

*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	<ul style="list-style-type: none"> - UML Distilled: A Brief Guide to the Standard Object Modeling Language (3rd Edition) , ISBN-13: 978-0321193681 - Object-oriented Software Engineering: An agile unified Methodology, by David C. King, McGrawHill, edition2014. ISBN-13: 978-0073376257, ISBN-10: 0073376256 - UML and Object-Oriented Design Foundations: Understanding Object-Oriented Programming and the Unified Modeling Language (Professional Skills Book 1) Kindle Edition
Supportive References	<ul style="list-style-type: none"> - Computer Science Curriculum 2013 – http://cs2013.org - ACM (Association for Computer Machinery) Curricula Recommendations - http://www.acm.org/education/curricula-recommendations
Electronic Materials	<ul style="list-style-type: none"> - ACM (Association for Computer Machinery) web site - http://www.acm.org/ - IEEE Computer Society web site -http://www.computer.org/portal/web/guest/home - Access to the Saudi Digital Library (SDL). - Using the learning management system of the university – Rafid System (https://lms.bu.edu.sa/).
Other Learning Materials	None

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	<ul style="list-style-type: none"> • A classroom or lecture hall with whiteboard for 25 students. • A digital circuit's laboratory.
Technology equipment (projector, smart board, software)	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Students • Faculty • Peer Reviewers 	<ul style="list-style-type: none"> • Surveys (indirect). • Direct feedback from students (interview



Assessment Areas/Issues	Assessor	Assessment Methods
	<ul style="list-style-type: none"> • Program Leader • Course Coordinator 	<p>between Program leader and students).</p> <ul style="list-style-type: none"> • Course evaluation by Peer Reviewers (indirect). • Class visit by Program Leader • Comprehensive Course report (where we can find information about teaching difficulties and action plan, ...)
Effectiveness of students assessment	<ul style="list-style-type: none"> • Students • Faculty • Peer Reviewers • Course Coordinator • Exam Evaluation Committee • Course Coordinator 	<ul style="list-style-type: none"> • Surveys (indirect). • Direct feedback from students (interview between Program leader and students). • Assessment results (direct) • Course evaluation by Peer Reviewers (indirect). • Comprehensive Course report (where we can find information about assessment difficulties and action plan, ...) • Exam evaluation by the Exam Evaluation Committee (indirect)
Quality of learning resources	<ul style="list-style-type: none"> • Students • Faculty • Peer Reviewers • Course Coordinator 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Faculty • Program Leader • Course Coordinator • 	<ul style="list-style-type: none"> • Student Results (direct) • Comprehensive Course report (where



Assessment Areas/Issues	Assessor	Assessment Methods
		we can find the CLO assessment results)
Other	None	None

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

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	

