Course Specification
(Bachelor)

Course Title:	Information Systems Engineering
Course Code:	452CIS-3
Program:	Bachelor of Science in Information Systems
Department:	Information Systems
College:	College of Computer Science & Information Systems
Institution:	Najran University
Version:	*Course Specification Version Number*
Last Revision Date:	*Pick Revision Date.*

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A. General information about the course:

1. Course Identification

1. Credit hours: (٣)					
3(2, 1, 0) [Theory, Lab, tutorial]					
2. Course type					
A.	☐University	☐College	☒ Department	☐Track	☐Others
B.	☒ Required		☐Elective		
3. Level/year at which this course is offered: (Year 4/ Level 11)					
4. Course General Description:					
Information system engineering describes the software engineering principles and techniques that are used in developing quality software products. It concerns on select an appropriate and effective software process models for a given project based on characteristics. Develop clear, concise and sufficiently formal software requirements specification based on the true needs of users and other stakeholders. In addition it is apply design principles and architectures in designing software and create a number of different UML models and structure approach. It Develop a project plan for software development project using application management techniques with working a team leader and a member of a team.					
5. Pre-requirements for this course (if any)**: 251CIS-3**					
6. Co-requisites for this course (if any)**:**					
7. Course Main Objective(s):					
• Describe the software engineering principles and techniques that are used in developing quality software products. • Select an appropriate and effective software process models for a given project. • Develop clear, concise and sufficiently formal software requirements specification based on the true needs of users and other stakeholders. • Apply design principles and architectures in designing software. • Create a number of different UML models and structure approach.					

- Develop a project plan for software development project using application management techniques with working a team leader and a member of a team.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	50	100%
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	20
2.	**Laboratory/Studio**	20
3.	**Field**	0
4.	**Tutorial**	10
5.	**Others (specify)**	0
Total		50

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	**Describe various software process models for information system.**	**K1**	**TS: 1- Giving real case examples of how to solve and develop software. TS: 2- Express the session interactive by asking**	**Indirect: - Students CLO - Survey Direct: - Quizzes. - Assignment and class participation.**

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
			questions during the lecture. TS: 3- Revising the last lecture before starting the new lecture and subject topic.	- Midterm exam 1 (Exam consists of multiple-choice questions, true/false, fill in the blanks, and theoretical questions.) -Final Exam
1.2	Implement the concept of software project management and perform software testing	K3	TS: 1- Giving real case examples of how to solve and develop software. TS: 2- Express the session interactive by asking questions during the lecture. TS: 3- Revising the last lecture before starting the new lecture and subject topic.	Indirect: - Students CLO - Survey Direct: - Quizzes. - Assignment and class participation. - Midterm exam 1 (Exam consists of multiple-choice questions, true/false, fill in the blanks, and theoretical questions.) - Final Exam
...				
2.0	**Skills**			
2.1	Collect software requirements and build system requirements	S1,S2	TS: 1- Most of cognitive skills will be achieved by lectures, explaining and	Indirect: - Students CLO - Survey Direct: - To arrange quizzes by

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
			highlighting the concepts. TS: 2- Asking students at the end on each lecture to bring some materials or application related to the lecture's subject. TS: 3- Explaining the difficult topics by taking extra tutorial to students. TS: 4- Helping students to describe effective strategies to new situations. TS: 5- To develop creative thinking. TS: 6- To discuss new topics and make the session interactive	including some materials that helps to develop certain cognitive skill. - At the end of each lecture, students will be given an exercise that can help to develop certain cognitive skill. - Midterm exam 1 and 2 (Exam consists of multiple-choice questions, true/false, fill in the blanks, and theoretical questions.) - To arrange mini seminars to prepare them for the next major seminars. - Final Exam
2.2	Develop software architecture and understand detailed software design	S4	TS: 1- Most of cognitive skills will be achieved by lectures,	Indirect: - Students CLO - Survey Direct:

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
			explaining and highlighting the concepts. TS: 2- Asking students at the end on each lecture to bring some materials or application related to the lecture's subject. TS: 3- Explaining the difficult topics by taking extra tutorial to students. TS: 4- Helping students to describe effective strategies to new situations. TS: 5- To develop creative thinking. TS: 6- To discuss new topics and make the session interactive	- To arrange quizzes by including some materials that helps to develop certain cognitive skill. - At the end of each lecture, students will be given an exercise that can help to develop certain cognitive skill. - Midterm exam 1 and 2 (Exam consists of multiple-choice questions, true/false, fill in the blanks, and theoretical questions.) - Final Exam
...				
3.0	**Values, autonomy, and responsibility**			
3.1	Model a system in UML using rational rose or ArgoUML.	V3	TS: 1- Divided students into groups work. TS: 2- Give student real case study	Indirect: - Students CLO - Survey Direct: - Arrange presentation

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
				for each group
3.2				
...				

C. Course Content

No	List of Topics	Contact Hours
1.	Software Process Models for Information Systems Development	5
2.	Software Requirements Engineering	10
3.	An Introduction into Object-Orientation	5
4	Software Architecture	5
5	Software Detailed Design	10
6	Software Testing	5
7	Software Project Management	10
Total		50

50

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quiz 1 & Quiz 2	3 & 7	10%
2.	Midterm Exam	5 or 6	20%
3.	Assignments(Theory & Lab)	8 & 11	10%
4.	Lab Assessment (Mini Project)	4,11	10%
5.	Final Lab	11	10%
6.	Final Examination	12 or 13	40%

*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	1.Sommerville 10, Software Engineering 10, 2015 2.Laudon, K. & Laudon, Management Information Systems: Managing the digital Firm, 2016. 3.Ammann & Offutt, Introduction to Software Testing,

	4.Boch, Jacobson, Rumbaugh, The Unified Modelling Language User Guide, Third Edition.
Supportive References	**Sommerville 10, Software Engineering 10, 2015**
Electronic Materials	**1.www.UML.org.** **2.http://www.filecrop.com/software-engineering-ian-sommerville-pdf.html**
Other Learning Materials	**For ArgoUML software:** **https://www.filehorse.com/download-argouml/download/**

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	▪ Lecture Room with +30 seats with PC, Auto Projector and a white board ▪ E-books are required ▪ Smart Boards.
Technology equipment (projector, smart board, software)	▪ Network printer is required. ▪ More efficient antivirus is required in Labs. ▪ Wireless projector is required in labs.
Other equipment (depending on the nature of the specialty)	• A File cabinet to keep Class Stuff, Markers, papers and students Files, and a printer to print program screenshots.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students, faculty and peer review	Indirect (questionnaires and interviews)
Effectiveness of Students assessment		
Quality of learning resources	Faculty, student, head of department	Surveys and Written exam
The extent to which CLOs have been achieved		
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	**17th Department Council**
REFERENCE NO.	**14460810-0976-00017**
DATE	**10/02/2025**