
جامعة الزيتونة الأردنية
Al-Zaytoonah University of Jordan



Course Syllabus

***According to JORDAN National Qualification
Framework (JNQF)***

**Course Name: Systems Analysis and
Design**

Course Number: 0130305

General Course Information:

Course Title	System Analysis and Design
Course Number	0130305
Credit Hours	3
Education Type	Traditional Education
Prerequisites/Co-requisites	Database 1
Academic Program	Computer Science
Program Code	112
Faculty	Faculty of Science and IT
Department	Computer Science
Level of Course	3
Academic Year /Semester	2024/2025 (2 nd Semester)
Awarded Qualification	Bachelor's degree
Other Department(s) Involved in Teaching the Course	N/A
Language of Instruction	English
Date of Production/Revision	28/04/2025

Course Coordinator:

Coordinator's Name	Dr. Mohammad Abdallah
Office No.	9357
Office Phone Extension Number	469
Office Hours	10-11 Everyday
E-mail	m.abdallah@zuj.edu.jo

Other Instructors:

Instructor Name	
Office No.	
Office Phone Extension Number	
Office Hours	
Email	

Course Description (English/Arabic):

English	This module provides an introduction to the principles, architecture, and protocols of computer networks. Topics include network models (OSI and TCP/IP), data transmission, routing, switching, and wireless communication. Students will explore concepts such as IP addressing, network security, and the functionality of key protocols like HTTP, FTP, and DNS. The course includes practical assignments in configuring and troubleshooting networks using tools and simulations. By the end of the module, students will understand how networks enable communication between devices and support the internet and other distributed systems.
Arabic	تركز هذه المادة على المنهجيات والتقنيات المستخدمة في تحليل وتصميم أنظمة المعلومات. تشمل الموضوعات جمع المتطلبات، دراسات الجدوى، نمذجة الأنظمة باستخدام أدوات مثل لغة النمذجة الموحدة (UML)، وتصميم حلول فعالة تلبي احتياجات المنظمات.

سيستكشف الطلاب النهج الهيكلية والشئية، بالإضافة إلى منهجيات أجائل. تتضمن المهام العملية ودراسات الحالة تطبيق المفاهيم النظرية على سيناريوهات واقعية. بنهاية المادة، سيكون الطلاب مجهزين لتحليل الأنظمة المعقدة، تحديد متطلبات المستخدمين، وتصميم حلول فعالة، قابلة للتوسع والصيانة.

Textbook: Author(s), Title, Publisher, Edition, Year, Book website.

Systems Analysis and Design: An Object-Oriented Approach with UML, 7th Edition. by David P. Tegarden, Binny Samuel, Roman Lukyanenko, Alan Dennis, Barbara Haley Wixom. Wiley 2025.

References: Author(s), Title, Publisher, Edition, Year, Book website.

- Alan Dennis, Barbara Haley Wixom, and Roberta M. Roth, System Analysis and Design, 8th Edition. Wiley; 8th edition (November 23, 2021).
- Systems Analysis and Design, Bechoo Lal, Toronto Academic Press, 2024.
- Systems Analysis and Design, Kenneth Kendall, Julie Kendall, 2020

Course Educational Objectives (CEOs):

1.	Analyze organizational problems and determine system requirements
2.	Develop and interpret system models using standard analysis tools
3.	Design system architecture that meets performance, scalability, and security requirements.
4.	Document software requirements and design specifications clearly and professionally.

Intended Learning Outcomes (ILO's):

Intended learning outcomes (ILOs)		Relationship to CEOs	Contribution to PLOs	Bloom Taxonomy Levels*	JNQF Descriptors**
K- Knowledge and Understanding					
K1	Explain the phases of the systems development life cycle and the role of system analysis within it.	CE01	PL02-K	Understand	Knowledge
	Identify and describe various system modeling techniques such as use case and DFDs.	CE02	PL02-K	Remember / Understand	Knowledge
S- Intellectual skills					
S1	Apply requirements elicitation techniques to gather user and system requirements.	CE01	PL04-S	Apply	Skills
	Construct system and architectural models using appropriate tools and notations.	CE02,3	PL04-S	Apply / Analyze	Skills
C- Competencies					
C1	Demonstrate ethical reasoning and judgment in analyzing and solving real-world system needs.	CE0 1,3,4	PL05, 6-C	Evaluate / Create	Competency
D- Transferable skills					

D1	Communicate technical concepts effectively in written and oral formats to diverse audiences.	CEO 4	PL07-D	Apply / Communicate	Transferable	
*Bloom Taxonomy Levels:						
Level #	1	2	3	4	5	6
Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
** Descriptor (National Qualification Framework Descriptors): K: Knowledge, S: Skill, C: Competency.						

Program Learning Outcome (PLOs):

(PLOs)		JNQF Descriptors**		
		K	S	C
PLO1-K	Knowledge of professional ethics, social responsibility, and the regulations governing them.	✓		
PLO2-K	Understanding various programming techniques, the stages of software development, and the fundamental principles of security.	✓		
PLO3-S	Skill in applying mathematical concepts to analyze and design algorithms and verify their correctness		✓	
PLO4-S	Skill in using different programming languages and applying them to develop software and computer applications.		✓	
PLO5-C	The ability to analyze, design, and develop effective and reliable computer programs that meet user requirements and adhere to professional ethics.			✓
PLO6-C	The ability to keep up with continuous advancements in computer science, innovate, and work independently or as part of a team.			✓
PLO7-D	The ability to work collaboratively, communicate effectively, and demonstrate teamwork spirit.	✓	✓	✓

** Descriptors according to the national qualifications framework (K: knowledge, S: skill, C: Competency)

Weekly Schedule (please choose the type of teaching)

- Face to Face (F2F)
 Hybrid (One – To - One)
 Online

Schedule of Simultaneous and their Topics:

Week	First Lecture (F2F)	Second Lecture (F2F)	IL Os	PL Os	JNQF Descriptor s*
1	Introduction to System Analysis and Design	Video about the Subject	ILO s-k1	PLO 1-K	knowledge
2	Planning Phase of SDLC	Assignment to write a short plan	ILO s-k1	PLO 2-K	knowledge
3	Requirements Gathering and Elicitation	Pick a project and gather its requirements	ILO s-k1	PLO 1-K	knowledge
4	Process Modeling	Continue with the project with the subject of the lecture	ILO s-k2	PLO 2-K	knowledge
5	Data Modeling	Continue with the project with the subject of the	ILO s-k2	PLO 1-K	knowledge

		lecture			
6	System Design – Architectural Design	Continue with the project with the subject of the lecture	ILO S-S1	PLO 3-S	skill
7	System Design – User Interface & Input/Output Design	Continue with the project with the subject of the lecture	ILO S-S1	PLO 4-S	skill
Midterm Exam (30%)					
9	Object-Oriented Design: Use Case and Class Diagram	Continue with the project with the subject of the lecture	ILO S-S2	PLO 3-S	skill
10	Object-Oriented Design: Sequence and Activity Diagrams	Continue with the project with the subject of the lecture	ILO S-S2	PLO 4-S	skill
11	Software Development and Coding Practices	Continue with the project with the subject of the lecture	ILO S-C1	PLO 5-C	Competency
12	Types of Testing (Unit, Integration, System, and User Acceptance Testing)	Continue with the project with the subject of the lecture	ILO S-C1	PLO 6-C	Competency
13	Deployment Strategies (Phased, Pilot, Parallel, and Direct Cutover)	Continue with the project with the subject of the lecture	ILO S-C2	PLO 5-C	Competency
14	System Maintenance & Agile Methodologies	Continue with the project with the subject of the lecture	ILO S-C2	PLO 6-C	Competency
15		Projects Discussion			
16		Final Exam			

* K: Knowledge, S: Skills, C: Competency

Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

- Lecture.
- flipped learning.
- learning through projects.
- learning through problem solving.
- participatory learning

Course Policies:

A- Attendance policies:

The maximum allowed absences is 15% of the lectures.

B- Absences from exams and handing in assignments on time:

Midterm exam can be retaken based on approval of excuse by the instructor's discretion.

Not handing assignment on time will incur penalties.

C- Academic Health and safety procedures

D- Honesty policy regarding cheating, plagiarism, and misbehaviour:

Cheating, plagiarism, misbehaviour will result in zero grade and further disciplinary actions may be taken.

E- Grading policy:

- All homework is to be posted online through the e-learning system.
- Exams will be marked within 72 hours and the marked exam papers will be handed to the students.
- Online Activities (Course Videos, Practice labs, Discussion Forums, Quizzes) **20%**
- Midterm **30%**
- Final Exam **50%**

F- Available university services that support achievement in the course: **E-Learning Platform, Labs, Library.**

Required Equipment:

- Access to the ZUJ E-Learning Platform at <https://exams.zuj.edu.jo/>
- E-learning plan
- Software for e-learning

Assessment Tools Implemented in the Course:

- Final Exam
- Midterm Exam
- Quizzes
- Homework
- Periodic reports for learning assessment

Responsible Persons and their Signatures:

Course Coordinator	Dr. Mohammad Abdallah	Completed Date	/ /
		Signature	
Received by (Department Head)	Dr. Mohammad Abdallah	Received Date	/ /
		Signature	