COURSE DESCRIPTIONS

Faculty	Science and Information Technology				
Department	Software Engineering			**NQF level**	6
Course Title	System Analysis and Design	**Code**	503381	**Prerequisite**	503201
Credit Hours	3	**Theory**	3	**Practical**	0
Course Leader	Dr. Mohammad Al-Khasawneh	**email**	m.alkhasawneh@jadara.edu.jo		
Lecturers	Dr. Mohammad Al-Khasawneh	**emails**	m.alkhasawneh@jadara.edu.jo		
Lecture time		**Classroom**	Blended learning (face to face + online)		
Semester	First 2024/2025	**Production**		**Updated**	2024
Awards	Bachelor of Software Engineering			**Attendance**	Fulltime

Short Description

The course material encompasses the concepts, tools, and techniques required to analyze and design information systems. The course will include structured development approaches and the system development life cycle, as well as rapid application development through alternative approaches such as prototyping. Emphasis will be given to the role of information systems in organizations and how they relate to organizational objectives and structure. Students will be introduced to system analysis and design modeling tools such as data flow diagrams, entity-relationship diagrams, data dictionaries, decision tables, decision trees, structured English, and structure charts. This course also includes the project management principles such as: project planning, scheduling, team analyzing and staffing.

The course methodology will include assigned readings from the textbook, lecture, written assignments and class discussions.

Course Objectives

The student should be able to:

- Know what is meant by System Development Life Cycle (SDLC) and the main activities involved in each stage of the (SDLC).
- Determine the most appropriate systems development method to use in various scenarios.
- Determine and document a project management plan for information system development cases. This plan will include components that address the development's schedule, process and quality.
- Depict systems graphically using context-level data flow diagrams, and entity-relationship models, use cases, and use case scenarios.

- Use systems analysis models to document the information system requirements of an organization.
- Understand the interactive methods to elicit human information requirements.
- Manage a project by preparing a budget, creating a work breakdown structure, scheduling activities, and controlling the schedule and costs.

Learning Outcomes
Knowledge

a1. Discuss the activities and output of the seven stages of the SDLC, and realize the

 Interdependence and sequence between these stages.

a2. Illustrate and explain the differences between the popular development methodologies such as:

 SDLC, agile approach, and Object-oriented systems analysis and design.

a3. Understand the differences between the main types of information gathering: Interviewing,

 Joint Application Design (JAD), and Questionnaires, and implement these types.

Skills

b1. Develop the systems graphically by using Data Flow Diagrams(DFD), and Entity-Relationship (ER) Models, and Use Cases Model(UML).

b2. Draw Gantt Chart and Program Evaluation Review Technique (PERT) diagrams for many projects.

Competence

Teaching and Learning Methods

Face to Face and Online Lectures and meetings

Assessment Methods

- As mentioned in the Course Assessment Plan (CAP)

			Course Contents		
Week	**Hours**	**CILOs**	**Topics**	**Teaching & Learning Methods**	**Assessment Methods**
.1 .2	3	a1,a2	- Define information systems analysis and design; - Understand the role of Systems Analyst. - Understand the type of System development Life Cycle; - Understanding Approaches to System Analysis.	Face to Face	
	3		Explain Rapid Application Development (RAD), prototyping, Computer Aided Software Engineering (CASE), and Service-Oriented Architecture (SOA).	Online synchronous or asynchronous	
.3 .4	3	a1, b1	- Describe six different sources of software. - Explain outsourcing. - Discuss how to evaluate off-the-shelf software. - Explain reuse and its role in software development.	Face to Face	Quiz & assignment
	3			Online synchronous or asynchronous	
.5 .6	3	b2	- Explain the process of managing an information systems project. - Describe the skills required to be an effective project manager.	Face to Face	Quiz
	3			Online synchronous or asynchronous	
.7 .8	4.5	a3	- Describe options for designing and conducting interviews and develop a plan for conducting an interview to determine system requirements. - Explain the advantages and pitfalls of observing workers and analyzing business documents to determine system requirements.	Face to Face	
				Online synchronous or asynchronous	
	1.5		Mid Exam	Face to Face	Mid exam
.9 .10	3	a2	- Understand the logical modeling of processes by studying examples of data flow diagrams (DFDs).	Face to Face	
	3		- Draw data flow diagrams following specific rules and guidelines that lead to accurate and well-structured process models.	Online synchronous or asynchronous	
.11 .12	3	a2, b1	- Understanding the concept of Decision tables and Decision trees.	Face to Face	Assignment
	3		- Understanding the concept of structured English	Online synchronous or asynchronous	
.13 .14	3	b1	- Understanding how design the effective forms and reports.	Face to Face	Quiz
	3		- Understanding how design the interfaces and dialogues	Online synchronous or asynchronous	
.15	3		• Practical project	Face to Face Online synchronous or asynchronous	
.16	2		Final Exam	Face to Face	Final Exam

	Infrastructure
Textbook	**Modern Systems analysis and Design,** Hoffer, Jeffrey A., George, Joey F., Valacich, Joseph S, 2020, (9th edition), Pearson.
Other References	1. **System analysis and Design,** Kendal and Kendall, Prentice Hall Publisher, 2019, (10th edition). 2. **Essentials systems analysis and Design**, Joseph S. Valacich; Joey F. George; and Jeffrey A. Hoffer, Prentice-Hall, 2006, (3rd edition). 3. systems Analysis & Design (3rd Edition) By: Alan Dennis, Barbara Haley Wixom, 2. Roberta M. Rogh Printed in the US 2006 by John Wiley & Sons Inc., ISBN: 13:978-0-471-72257-1 or ISBN: 10:0-471-72257-x { See: www.wiley.com/college/dennis}
Required reading	- introduction to software Engineering
Electronic materials	
Other	

Course Assessment Plan						
Assessment Method	**Grade**	**CILOs**				
		a1	**a2**	**a3**	**b1**	**b2**
Midterm	30	10	8	0	12	0
Final Exam	40	0	0	15	10	15
Coursework	30					
Coursework assessment methods — Assignments			7		5	
Coursework assessment methods — Case study						
Coursework assessment methods — Discussion and interaction						
Coursework assessment methods — Group work activities						
Coursework assessment methods — Lab tests and assignments						
Coursework assessment methods — Presentations						
Coursework assessment methods — Quizzes					8	10
Total	100	10	15	15	35	25

Plagiarism

Plagiarism is claiming that someone else's work is your own. The department has a strict policy regarding plagiarism and, if plagiarism is indeed discovered, this policy will be applied. Note that punishments apply also to anyone assisting another to commit plagiarism (for example by knowingly allowing someone to copy your code).

Plagiarism is different from group work in which a number of individuals share ideas on how to carry out the coursework. You are strongly encouraged to work in small groups, and you will certainly not be penalized for doing so. This means that you may work together on the program. What is important is that you have a full understanding of all aspects of the completed program. In order to allow proper assessment that this is indeed the case, you must adhere Strictly to the course work requirements as outlined above and detailed in the coursework problem description. These requirements are in place to encourage individual understanding, facilitate individual assessment, and deter plagiarism