

Course Syllabus

1.	Course title	Systems Analysis and Design
2.	Course number	1902474
3.	Credit hours (theory, practical)	3
	Contact hours (theory, practical)	3
4.	Prerequisites/corequisites	Database Management Systems
5.	Program title	Computer Information Systems
6.	Year of study and semester (s)	All semesters
7.	Final Qualification	B.Sc.
8.	Other department (s) involved in teaching the course	
9.	Language of Instruction	English
10.	Date of production/revision	Oct 2019
11.	Required/ Elective	Required

12. Course Coordinator:

Office number: CIS
Office phone: 22562
Email: s.alfalah@ju.edu.jo
Office Hours:
TBA and by appointment

13. Other instructors:

Office numbers, office hours, phone numbers, and email addresses should be listed.
Dr. Hamad Alsawalqa

14. Course Description:

Introduction to systems development; Development life cycle; System Development feasibility; Development of fact finding methods; Context diagram; Data flow diagram; Decision tables and trees; Data dictionary; Installation; Training; Development Tools: Documentation, Maintenance, Conceptual design, DB design, Reverse engineering, Graphical user interface, Systems life cycle, System conversion, System charts and flow of control; Case Studies in Clinical Information Systems.

15. Course aims and outcomes:

A- Aims:

The main goal of this course is to provide students with a solid background in information systems analysis and design techniques through a combination of theory and practice. It introduces the vital logical and design considerations addressed during system and application software development.

Upon completion of the course, students are expected to be able to:

1. Define various systems analysis and design (SA&D) concepts and terminologies
2. Describe the stages of the system development life cycle model
3. Describe different methodologies and state-of-the-art developments in SA&D techniques and methods,
4. Compare, use and synthesize different conceptual modeling techniques for systems analysis (including ERDs, DFDs and UML)
5. Apply logic modeling techniques (decision tree/table, structured English),
6. Address the managerial issues involved in SA&D,
7. Model the importance of collaboration and communication during SA&D.
8. Apply analysis and design methodologies for real world systems development such as Clinical Information Systems

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to ...

Upon successful completion of this course students will be able to ...

A- Knowledge and Understanding:

(A1) Be able to discuss/explain the essential concepts and major principle relevant to Systems analysis and development.

(A2) Be able to discuss/explain the importance of a wide range of (software and Hardware) used in development of computer systems and information technology products.

(A3) Be able to discuss/explain the essential concepts and major principles relevant to the professional and ethical responsibilities of being systems analyst.

B-Intellectual skills-with ability to

(B1) Analyze a wide range of systems/healthcare systems and provide solutions through suitable designs, structures, diagrams, and other appropriate analysis and design methods.

(B2) Identify a range of solutions and critically evaluate them and justify proposed design and development solutions.

(B3) Design practical software systems.

(B4) Transform user requirements into system requirements.

(B5) Employ analytical skills as appropriate during the system development life cycle stages

C- Practical Skills-With ability to

(C1) Plan and undertake a major individual/group systems analysis project in the area of computer information systems / Clinical Information Systems.

(C2) Prepare and deliver coherent and structured verbal and written technical reports.

(C3) Give technical systems analysis presentations suitable for the time, and audience.

(C4) Be aware of health and safety of real world computer information systems.

(C5) Use appropriate computer-based design support tools.

D- Transferable Skills-With ability to

(D1) Display an integrated approach to the deployment of communication skills.

(D2) Work effectively with systems owners and for systems users.

(D3) Strike the balance between self-reliance and seeking help when necessary during stages of systems development.

(D4) Display personal responsibility by working to multiple deadlines during stages of systems analysis and development.

16. Topic Outline and Schedule:

Topic	Week	ILOs	Program SOs ¹	TLA (teaching, learning and Assessment)
Welcome and Orientation Review Syllabus, objectives, textbook, projects assignments, and online material Overview of Information Systems, Healthcare Information Systems : elements, components and types	1	A1, A3	6	T: Instructor Introductory Presentation L: Reading notes and online resources A: Class discussion
Assuming the Role of the System Analyst: Information systems Phases of analysis and design Development steps of Healthcare IS System maintenance CASE tools	1+2	A1 ,A2, B5, D1-D4	5,6	T: Instructor Presentation L: Reading notes and online resources A: Class discussion and questions
Understanding Organizational Style and Its Impact on Information Systems: Organizational environment Nature of systems Structure of healthcare organization Context-level data flow diagram ERD Levels of management management level of the health organization system Organizational culture	2+3	A1, A2, B5, C1, C4	5,3	T: Instructor Presentation L: Reading lecture notes and online resources A: Class discussion and questions
The Information in Healthcare Organization Using Data Flow Diagrams: Defining and using Data Flow Diagrams	3+4	A1, A2, B1, B4, B5, C5	1,6	T: Instructor Presentation, Lab Demonstration and hands-on Activities L: Reading lecture notes and Reading online e-Learning DFD tutorial A: Lab Practice / DFD Exercise
Determining Feasibility, Managing Analysis and Design Activities: Project initiation, Determining project feasibility, Project scheduling (PERT-Gantt) ,Managing project activities, Manage systems analysis team	5+6	A1, A3, B1, B2, B5, C1, D3	5,6	T: Instructor Presentation, Lab demonstration and Case Study L: Reading lecture notes A: Exercise on Project Schedule chart, homework feasibility study
System and Subsystems of Healthcare Information System Project Overview: Project description, Project objectives, Team and content selection of the group project, Discussion of high-level outline of individual projects	6	B4, B5, C1, C2, C3, D2, D4	1,5,6	T: Instructor Presentation and facilitation L: Reading and Group Project discussion A: Group project outline
Midterm Exam				
Information Gathering: Interactive Method: Question format Interviewing techniques Questionnaires	7	B3, B4, B5, D1, D2, D3	3,5	T: Instructor Presentation, Case Study L: Reading lecture notes, Online Resources A: Class Dialog and scenarios
Information Gathering: Unobtrusive Methods: Sampling, Observation, Prototyping	8	A2, B3, B5, D2	1,3,5	T: Instructor Presentation L: Reading lecture notes and online resources A: Class discussion and exercise
Analyzing Systems Using Data Dictionaries: Data dictionary concepts Defining data flow, data structures, data stores	9	A1, A2, B1, B5, C5	1	T: Instructor Presentation and Case Study Demonstration L: Reading lecture notes, Web search A: Class discussion and exercise
Describing Process Specifications and Structured Decisions: Process specifications, Structured English, Decision tables, Decision trees	10	A1, A2, B1,B3, B4	1,3	T: Instructor Presentation L: Reading notes and online resources A: Class discussion and questions

¹ The ABET outcomes

Case Studies in Clinical Information Systems: Submit Final Project for grading and presentation	11	A1-A3, B1 -B5, C1-C5, D1-D4	1,3,5,6	T: Project Demonstration L: Observation and discussion A: Evaluation of the project documentation and presentation
Review	12			T: Review and Summary L: Discussion A: Answer Review Questions
Final Exam				

(Please mention instructors per topic if the course topics are being taught by more than one instructor)

17. Evaluation Methods and Course Requirements (Optional):

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Teaching (T) Strategies: Class Contact is 3 Hours per week. The Course will be delivered using different means like lecture, presentations, seminars, discussion, lab demos and case studies.

Learning (L) Methods: Students attend classes, ask questions and participate in discussions, do the home works, present the assignments and demo their works. A student will use the lab and select a CASE tool to implement the assignments. Students will access the e-learning platform for more instruction and supported learning materials.

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Assessment (A) Methods: There will be several assessment methods of evaluation the performance of the students such as attending and class participation, grading the homework, quizzes and assignments; conducting the Midterm and the Final Exams. Every student is expected to completely adhere to the assignments and project strict deadlines, absolutely no exceptions will be given.

Assessment Weights:

- Assignments + project + quizzes + participations: 20%
- mid term exam: 30%
- Final exam : 50%

18. Course Policies:

A- Attendance policies:

Class attendance is mandatory. University regulations will be applied. Regular attendance is essential for satisfactory completion of this course.

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

Any student who misses any exam will receive a failing grade. Permission for makeup will be granted only if the student notifies the instructor in due time and presents evidence of an officially excused absence.

C- Health and safety procedures:

As applied in Faculty.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

Assignments are individual or done in learning teams. While students are free to discuss their individual assignments with anybody, including fellow students, individual assignments are expected to show the expertise, creativity and critical faculty of the individual student. Virtually identical individual assignments (in the judgment of the instructor) are not acceptable. Plagiarism is unacceptable and will be punished with an **F** for the full course. References to all source materials are necessary.

E- Grading policy + Weighting (i.e. weight assigned to exams as well as other student work)

All of the following are important in the evaluation of a student's work.

- Written Reports:
 - Organization, clarity and continuity.
 - Quality, completeness and soundness of the analysis
 - Quality of presentation.
 - Oral Presentation:
 - Organization and continuity.
 - Selection and support of recommendations.
 - Time, style and clarity.
 - Professionalism.
- Project: 20%
- Mid term exam: 30%
- Final exam : 50%
- Satisfactory completion of this subject requires a 50% pass in the end-of-semester
- Grading Scale:
- | | | | | | | | | | |
|-------|----|-------|----|-------|----|-------|----|--------|---|
| 0-44 | F | 45-49 | D- | 50-54 | D | 55-59 | D+ | | |
| 60-63 | C- | 64-68 | C | 69-72 | C+ | | | | |
| 73-76 | B- | 77-80 | B | 81-84 | B+ | 85-89 | A- | 90-100 | A |

F- Available university services that support achievement in the course:

elearning.ju.edu.jo

G- Statement on Students with disabilities

Students with Disabilities: Students with disabilities who need special accommodations for this class are encouraged to meet with the instructor and/or their academic advisor as soon as possible. In order to receive accommodations for academic work in this course, students must inform the course instructor and/or their academic advisor, preferably in a written format, about their needs no later than the 4th week of classes.

19. Required equipment:

N/A

20. References:

A- Required book (s), assigned reading and audio-visuals:

1. Kendall & Kendall, "Systems Analysis and Design", (9th Edition.) Pearson, 2014
2. System Analysis and Design Tutorial
https://www.tutorialspoint.com/system_analysis_and_design/

B- Recommended books, materials, and media:

1. Valacich, Joseph S, George, Joey F; Modern Systems Analysis and Design; 8th; Pearson, 2016.
2. Satzinger, John W, Jackson, Robert B, Burd, Stephen D; Systems Analysis and Design in a Changing World; 7th; 2016
3. Roberta M. Roth, Alan Dennis, Barbara Haley Wixom. Systems Analysis and Design, 5th Edition

International Student Version.. ISBN: 978-1-118-09374-0. OR
http://www.uoitc.edu.iq/images/documents/informaticsinstitute/Competitive_exam/Systemanalysisanddesign.pdf

4. Bentley, L. and Whitten, J., "Systems Analysis and Design for the Global Enterprise", Seventh Edition, McGraw-Hill Irwin, 2007
5. David Harris, "Systems Analysis and Design-A Project Approach", Dryden, 1995.
6. FitzGerald, J. and FitzGerald, A, "Fundamentals of Systems Analysis", Wiley, 2001, (4e).
7. Hoffer, J., George, J. and Valacich. JJ., "Modern Systems Analysis and Design", The Benjamin/Cummings Pub., 1996.
8. Whitten, J., Bentley, L. and Barlow, V., "Systems Analysis and Design Methods", IRWIN, 3rd Ed. Latest.
9. PowerDesigner: <http://www.sybase.com/products/modelingmetadata/powerdesigner>
10. Unified Modeling Language (UML): <http://WWW.UML.ORG>
11. Microsoft Visio: <http://WWW.MICROSOFT.COM>
12. Rational Software: <http://WWW.RATIONAL.COM>
13. Dataflow diagram tutorial: <http://www.getaheadirect.com/gwbadfd.htm>
14. Microsoft Project: <http://www.brighthub.com/office/projectmanagement/articles/71235.aspx>
15. E-learning course for DFD
<http://www.ju.edu.jo/elearning/elearning/Pages/PublishedEc/analyses/main.swf>
16. Healthcare Information and Management Systems Society: <http://www.himss.org/>
17. Journal of Medical Systems: <https://link.springer.com/journal/10916>
18. Healthcare IT News : <http://www.healthcareitnews.com/>

21. Additional information:

- Students are encouraged to make heavy use of the library, E-LIBRARY
<http://ezlibrary.ju.edu.jo/login> or from within the university using (<http://e-library>)
- The instructor can make changes to this syllabus when necessary.
- University regulations will be preserved at all times

Date: -----Oct 2019-----

Name of Course Coordinator: -----Dr. Salsabeel Alfalah-----Signature: -----

Head of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: -----Signature: -----

Copy to:
 Head of Department
 Assistant Dean for Quality Assurance
 Course File