Course Syllabus
Spring 2024-2025
Professor Dr. Aboull Ella hassanien
ISOM 331 – Systems Analysis and Design

Lecture Time and Location:
QMIS 331   Sunday, Tuesday, and Thursday (9:00-9.50) Room 1005/D2

Contact Information:
Location   ISOM Department – 2nd Floor – Office No. 14
Email   Abo.aly@ku.edu.kw
Office   A2 1015, 2nd floor close to the ISOM secretary department
Office Hours Sunday, Tuesday, and Thursday (10:00-11:00) or by MS Teams

Teaching Assistant:
Name   TBA
Location   ISOM Department – 2nd Floor
Email
Office   TBF
Office Hours TBF

Course Description:
This course will help students learn and apply contemporary systems analysis and design methods, techniques and tools to augment innovative business information technology (IT) capabilities. It addresses the four phases of the system development process including planning, analysis, design, and implementation. It focuses on how IT can effectively and innovatively contribute to the way business is organized. It covers a systematic methodology for analyzing a business problem or opportunity, determining what role, if any, innovative IT can play in addressing the business need, articulating business requirements for the IT solution, specifying alternative approaches to acquiring the IT capabilities needed to address the business requirements, and specifying the requirements for the information systems solution (e.g., in-house development, development from third-party providers, or purchased commercial-off-the-shelf (COTS) packages), and implementation of the system.

Course Goal
This course is designed to help students learn how to apply systems analysis and design methods, techniques, and tools to develop business IT applications.

**Course Learning Objectives:**
Upon successful completion of the course, students will be able to:

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1.   Recognize and identify business problems/opportunities that are amenable to IT solutions and inventions.

2.   Initiate, specify, analyze feasibility, and prioritize innovative IT solutions for a business problem or opportunity. [LG2 & LG5]

3.   Appropriately apply methodologies, techniques, and tools. You can model data structure based ERD or DFD/ UML, using several free tools (e.g. erdplus.com, Gliffy.com, lucidchart.com, github.com) or commercial tools (e.g. Visible Paradigm, Visible Analyst, and MS Visio) and model business processes using DFD and UML, and identify the requirements and system specifications for the chosen IT solution (i.e., information system). [LG2, LG3, & LG5]

4.   Write clear and concise business requirements documents and convert them into technical specifications [LG4].

5.   Communicate effectively with various organizational stakeholders, using a variety of techniques, to collect information and to convey proposed solution characteristics to them. [LG4]

6.   Effectively contribute to information systems projects and practice project management methods and tools (e.g., GANTT, PERT). [LG3]

7.   Identify, assess, and make recommends of appropriate information systems service sourcing alternatives (e.g., in-house developed systems, packaged systems, outsourced service). [LG2 & LG5]

8.   Recognize, analyze, and resolve ethical issues involved in the analysis, design, and acquisition of information systems service [LG1].

Required Material:
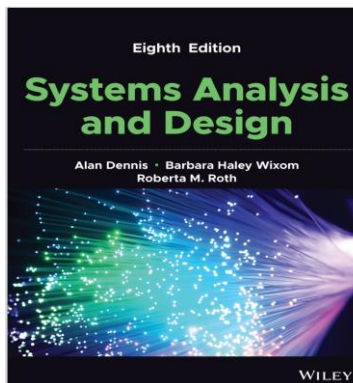
Systems Analysis and Design, 8th Edition (Alan Dennis, Barbara Wixom, Roberta M. Roth) (2022)

Additional Material   : Other material is available: Course Lecture Slides, Case Studies, and News Articles.

E-Learning System   : http://onlinetrain.ku.edu.kw/ldap/

COMPREHENSIVE PROJECTS

Students will be required to complete a system analysis project that you will carry into phases after each chapter. A total of 15 points will be assigned to this project. You will apply knowledge you gain over the planned chapters and conduct the necessary planning activities related to the following: identify and select potential projects, initiate and plan a selected project, collect requirement related to selected project, structure the collected requirements in term of process (DFD) and data (ERD), generate the logical models related to selected project (in term of DFD and ERD), and finally design the physical system in an existing commercial prototype.

Course Requirements and Policies:

Assignments: I will distribute them by e-mails and MS Teams. There will be both individual and team assignments. These assignments/project phases need to be submitted to me <u>before the due date/time</u> using <u>MS Teams groups and</u> providing me with <u>a hard copy</u> at the beginning of class. No homework will be accepted if not submitted <u>on time</u>. All work need to be MS Word-processed – typed – and following the requirements specified in each assignment/phase (see guidelines during second week of the course). Assignments, short quizzes will be announced in advance. You have <u>one week to check</u> and review posted Assignment, Quiz, or Exam. After one week the grade will be final.

Attendance: Every student in this course must abide by the Kuwait University Policy on Attendance (published in the Student Guide, Chapter 3, Section 13). A copy of the student guide can be accessed online on: http://www.kuniv.edu/cs/groups/ku/documents/ku_content/kuw055940.pdf

Students are expected to be on time to the lectures. You will be given three "Admit One" tickets once you use them you are not allowed in the classroom if late.

Students are required to attend all lectures. You are allowed one absence for which advance notice is given via e-email (both instructors). This will be recorded but not figured in the attendance requirement (Free Absence). Other than that, we will stick to Kuwait University Policy for their attendance. First warning will be after 3 absences classes. Second and final warning will be given after 3 more absences. An "FA" will be given after one more absence.

Class Preparation: It is very important that students are prepared for each class period. For each class there will be a required reading (case or chapter) or video.

Classroom behavior: Students are responsible for what they missed "please email or MS Teams". Students are allowed to drink and eat as long as it does not disrupt the class and provided, they clean up after them. Should I find leftovers or mess (the entire class will lose this privilege) – this does not apply to the labs (there are no food or drinks in the labs). Students are expected to turn off their phones during class.

Cheating and Plagiarism: Every student in this course must abide by the Kuwait University Policy on Cheating and Plagiarism (published in the Student Guide, Chapter 3, Section 2). A copy of the student guide can be accessed online on: www.kuniv.edu/cs/groups/ku/documents/ku_content/kuw055940.pdf
Please carefully note all sources and assistance when you turn in your work. Under no circumstances should you take credit for work that is not yours. You should neither receive nor give any unauthorized assistance on any deliverable.

All submitted report will be via Turnitin system (www.turnitin.com); and MS Teams for students' communication

Writing Style: Students must refer to APA writing style for their assignments and report writing. Refer to the English Language Unit for help. I will only answer to professionally written emails.

Grading:
The scores in this course will be the weighted average of the following items:

Weight	Description
20 %	4 short exams out of 6 [each covers a chapter], most of them open questions
40 %	Final exam [comprehensive with specified sections],
15%	Midterm exam
15 %	Assignments, projects and group work
10 %	**4 selected practical topics from e-training of KU (https://onlinetrain.ku.edu.kw).** Each student must login using the same username and password used when accessing the SIS portal, study the assigned 2 courses and pass quizzes / turn in paper certificates for the instructor that each account for 5% of the total grade. The due date to submit the digital certificate is 1/May 2025.

1- Ethics and project management

This course illustrates how the project management community and the Project Management Institute have established ethics standards to help members navigate ethical issues and establish project management as a profession.

- recognize key concepts related to business ethics
- identify examples of ethical dilemmas in project management
- recognize the benefits of managing ethics in your business
- identify the purpose of the PMI® Code of Ethics and Professional Conduct
- identify standards related to each of the four values described in the PMI® Code of Ethics and Professional Conduct
- distinguish between the values of responsibility and respect
- distinguish between the values of fairness and honesty
- match examples of standards to the types of inappropriate behavior they address
- identify the aims of the PMI ethics complaints review process

2. Generative AI and Its Impact to Everyday Business

In this course, you will gain an introductory understanding of generative AI and its potential impact on everyday business activities. This will provide you with a foundation for more in-depth exploration of specific techniques and ethical considerations in subsequent courses.

- discover the key concepts covered in this course
- identify the basic principles of generative AI as it applies to everyday business operations
- recognize practical applications of generative AI and its impact on content generation, product design, or customer experience enhancement
- recognize how organizations can strategically leverage generative AI to drive innovation and optimize operations
- identify the potential benefits of implementing generative AI in business operations while acknowledging the associated challenges
- summarize the key concepts covered in this course

3-Business Analysis Documentation & Criteria [URL: https://etraining.percipio.com/courses/5611f0f2-b388-11e7-9c7a-4e99e0664338]

- distinguish between data dictionary elements
- recognize concept modeling limitations
- distinguish between definitional and behavioral rules
- distinguish between business case creation steps
- identify characteristics of business capability analysis
- recognize use case elements
- identify sequence diagram elements
- recognize considerations for user stories
- recognize considerations for establishing metrics and key performance indicators
- distinguish between acceptance and evaluation criteria strengths
- recognize nonfunctional requirements analysis challenges

4-Planning the Project Schedule (2021 Update) [URL: https://etraining.percipio.com/courses/39470f8f-d9f1-4e32-a12d-3472b56fc21e]

	• discover the key concepts covered in this course • identify components of the schedule management plan • identify the tools and techniques for defining project activities • choose the appropriate technique to define activities for a given project • recognize the roles that the activity list and activity attributes play in project management • recognize the roles that the milestone list plays in managing a project • recognize the nature of dependencies between project activities • match types of precedence relationships with their descriptions • identify tools and techniques for estimating activity durations • recognize the parametric estimating formula • recognize the three-point estimating types
100%	TOTAL

Grade Distribution:

Grade	Range
A	≥ 95
A-	≥ 90 and < 95
B+	≥ 87 and < 90
B	≥ 83 and < 87
B-	≥ 80 and < 83
C+	≥ 77 and < 80
C	≥ 73 and < 77
C-	≥ 70 and < 73
D+	≥ 65 and < 70
D	≥ 60 and < 65
F	< 60

Course Outline:

Subject / chapter	Topics
Course Introduction	Introduction & Orientation
Chapter 1The Systems Analyst and Information Systems	Introduction, The Systems Analyst, Systems Analyst Skills, Systems Analyst Roles, The Systems Development Life Cycle, Planning, Analysis, Design, Implementation, Project Identification and Initiation, System Request, Applying the Concepts at DrōnTeq, Feasibility Analysis, Technical Feasibility, Economic Feasibility, Organizational Feasibility
Chapter 2 Project Selection and Management	Introduction, Project Selection, Applying the Concepts at DrōnTeq, Creating the Project Plan, Project Methodology Options, Selecting the Appropriate Development Methodology,
Chapter (3) Requirements Determination	The Analysis Phase, Requirements Determination, What Is a Requirement?, The Process of Determining Requirements, The Requirements Definition Statement, Requirements Elicitation
Chapter (4) Understanding Processes with Use Cases and Process modeling	What Is a Use Case, Use Cases in Sequence, Applying Use Cases, Use Case Practical Tips, and Data Flow Diagrams, Reading Data Flow Diagrams, Elements of Data Flow Diagrams, Using Data Flow Diagrams to Define Business Processes, Process Descriptions, Creating Data Flow Diagrams, Creating the Context Diagram Validating the Data Flow Diagrams
Chapter 5 Data Modeling	The Entity Relationship Diagram, Reading an Entity Relationship Diagram, Elements of an Entity Relationship Diagram, The Data Dictionary and Metadata, Creating an Entity Relationship Diagram,

	Building Entity Relationship Diagrams
Chapter (6) Moving into Design,	Transition from Requirements to Design, System Acquisition Strategies, Custom Development, Packaged Software, Outsourcing, etc.
Chapter 7, 8 and 9	Architecture Design User Interface Design, Program Design
Final Exam	Chapters to be announced

Important Date

Event	Date
Last day of classes	
E-Training certificates	1 may 2025
Final Exam	On the system

Policies: You are responsible for knowing these policies

- **Attendance and Participation:** Every student in this course must abide by the Kuwait University Policy on Attendance (published in the Student Guide, Chapter 3, Section 13). A copy of the student guide can be accessed online on:http://www.kuniv.edu/cs/groups/ku/documents/ku_content/kuw055940.pdf. Be on time for the lecture (remember, class starts at 12:00 AM, and not 12:05). At the beginning of each lecture (after 5 minutes of the class start), I will take attendance, anyone coming after that time will be considered as absent, and will result in an automatic deduction of 0.5 points per extra absence from your overall grade.
- Absenteeism: university regulations governing absenteeism are applied to all students. This involves a first warning after 3 hours, a second warning after additional 3 hours absence and a failure notice for any absence beyond the six hours. Absence with a valid excuse will still count as an absence. But each student is allowed two absences (no questions asked), after that, each absence
- "I didn't know" is not an excuse
- Each student should turn silent his/her mobile at the beginning of class
- Make-up quizzes and exams: No Makeup quizzes or exams will be given
- After a grade is posted (quizzes, assignment, midterm), <u>you will have two days</u> to discuss it with your instructor or teaching assistant (TA). After that, the grade is final and released.
- For the final exam, the final grades will be posted after 12 hours
- Negotiation of the final grade is neither accepted nor discussed.

Guidelines how to send me e-mails in order to recognize you

For many of us, e-mail is an important way to communicate. Using e-mails well can help us communicate effectively. Please observe the following guideline when you send me emails (**<u>if you do not comply to the following rules you will get points deduction</u>**)

- Include an informative subject line. For example, if you include in the subject line "Missing Class Today", I would have known immediately what the message was about.
- Make sure your e-mail is set up to show your name correctly in recipients' inboxes and not a nickname such as "pinky". If you use a nickname then consider your e-mail as ignored deleted
- Start and end positively. Even if the e-mail is something negative, such as a complain, begin with positive words, such as Dear Dr Kamel and end the same "Thank you".
- Keep paragraphs relatively short. Long paragraphs tend to be hard to read in e-mail. Therefore, break your message into short paragraphs.
- Select one language when sending me e-mails and write me either in English or in Arabic. However, don't mix the two. It is too bad for you and your image.

- Ovoid use of "chat" language such as plz for "please", and 2 for "two", etc.
- Proofread your e-mail before sending it to me.

Writing Style: Students must refer to APA writing style for their assignments and report writing. Refer to the English Language Center for help.

CBA Vision, learning objectives

CBA Vision: To be recognized for developing business professionals

CBA Mission: We exist to provide an exceptional learning experience ---through excellent education, quality research, and close engagement with the community--- that transforms our students into innovative business professionals who will contribute to the development of Kuwait.

CBA Undergraduate Program Learning Goals:

LG1. **Ethical Skills:** A CBA graduate shall be able to recognize ethical issues present in business environment, analyze the tradeoffs between different ethical perspectives, and make a well-supported ethical decision.
Student Learning Objectives:
1.1. Identify the ethical dimensions of a business decision.
1.2. Recognize and analyze the tradeoffs created by application of competing ethical perspectives.
1.3. Formulate and defend a well-supported recommendation for the resolution of an ethical issue.

LG2. **Decision Making Skills:** A CBA graduate shall be able to recognize the extent of the implications of business decisions, evaluate different proposals based on available facts, and make a well-supported business decision.
Student Learning Objectives:
2.1. Recognize the implications of a proposed business decision from a variety of diverse, internal and external, stakeholder perspectives.
2.2. Evaluate the integrity of the supporting evidence and data for a given decision based on business principles.
2.3. Analyze a given business decision using integrative techniques, structures, and frameworks.

LG3. **IT and Computer Skills:** A CBA graduate shall demonstrate capabilities in using general-purpose computer applications
Student Learning Objectives:
3.1. Use a word-processing application to type and format a business document.
3.2. Use a data-processing application to analyze or solve a business problem.
3.3. Use a presentation-making application to prepare a slideshow for a business issue.

LG4. **Communication Skills:** A CBA graduate shall be able to communicate effectively in a wide variety of business settings.
Student Learning Objectives:
4.1. Deliver clear, concise, and audience-centered presentations.
4.2. Write clear, concise, and audience-centered business documents.

LG5. **Analytical Skills:** A CBA graduate shall be able to apply quantitative and qualitative methods to solve business problems.
Student Learning Objectives:
5.1. Use appropriate tools to solve a given business problem.
5.2. Analyze business problems using suitable business theories and techniques.
5.3. Structure logic and frame quantitative analysis to solve business problems.