IE-462
Section 1, CRN: 35771/72/73
Section 2, CRN: 48769/70/71

Second Semester 1446 (Spring-2025) – 2(2,1,1)
"INDUSTRIAL INFORMATION SYSTEMS"

Course Description

Course-in-brief

Analysis, design and implementation of industrial information systems with special focus given to manufacturing systems and environments; Information systems development life cycle, and information systems requirements determination; Database modeling and design; Structured analysis and functional architecture design; Object-oriented analysis and design; E-business and web-based database.

Level: 9 (for more details: https://engineering.ksu.edu.sa/en/Bachelor_of_Science_in_IE)

Estimated Category Content:
Engineering science: 1 credit hour
Engineering design: 1 credit hour

Prerequisite: IE 314 – Industrial Operations Management – 2 (Level 6)

Co-requisite: None

Time and Place:

Section 1	Section 2
Lecture (35771):	Lecture (48769):
Sun: 11:00 – 11:50 AM	**Sun: 10:00 – 10:50 AM**
Thu: 11:00 – 11:50 AM	**Thu: 10:00 – 10:50 AM**
1 A 54/1	1 A 46/2
Dr. El-Sherbeeny	Dr. El-Sherbeeny
Tutorial (35772):	Tutorial (48770):
Tue: 11:00 – 11:50 AM	**Tue: 10:00 – 10:50 AM**
1 A 54/1	1 A 46/2
Dr. El-Sherbeeny	Dr. El-Sherbeeny
Lab (35773):	Lab (48771):
Thu: 03:00 – 04:50 PM	**Sun: 01:00 – 02:50 PM**
1 A 60	1 A 46/3
TBD	TBD

Course Resources

Resources for the course include the instructor; textbook; references; class notes and handouts; your teammates; the library; and the World Wide Web.

Instructor
Ahmed M. El-Sherbeeny, PhD
Office: Room A2 128/1; email: aelsherbeeny@ksu.edu.sa
Web Site: https://faculty.ksu.edu.sa/en/aelsherbeny
Phone (Office): +966-(0)11-496-8535

Teaching Assistant
TBD

Office Hours
Office hours can be conducted physically or via Zoom, phone, email. Best times to find me in the office this semester are:
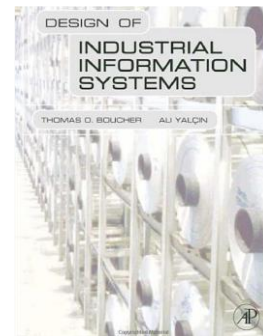Dr. El-Sherbeeny: **Sun, Mon, Tue, Wed: 03:00 – 05:00 PM**; or by appointment.

Textbook: *Design of Industrial Information Systems*.
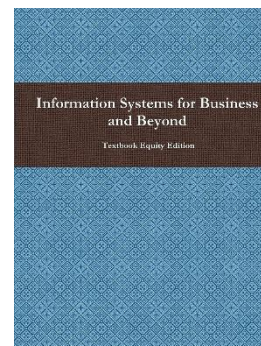Thomas Boucher, and Ali Yalcin. Academic Press.
First Edition. 2006.
eBook ISBN: 9780080465531.

References:

- *Modern Systems Analysis and Design*
  Joseph Valacich, and Joey George. Pearson.
  Ninth Edition. 2021. ISBN 13: 978-1-292-35162-9.

- *Information Systems for Business and Beyond*.
  David T. Bourgeois, et al.
  Digital Commons @ Biola (open textbook).
  Second Edition. 2019.

Project Work
You will be asked to design a complete IIS project case study, including database, user forms design and development. This will be discussed throughout the course in details.

Course Objectives

The course aims to get the student acquainted with information system (IS) development concepts, life cycles, and tools, with special focus placed on Industrial IS (IIS); to enable students to develop and communicate IIS models.

Intended Learning Outcomes (ILO's)

At the end of this course, students are expected to:

1. **Identify** and **apply** fundamental concepts and requirements regarding Industrial Information Systems, including relevant relational databases, and query languages. [**SO1**]
2. Use learned concepts to **design** and/or **improve** an industrial information **system** consisting of **material**, and/or **information**. [**SO2**]
3. Show the ability to **effectively** engage in a **teamwork** project to redesign a basic Industrial Information System. [**SO5**]

Course Policies

Attendance

<u>Attendance is a must</u>! Attendance will be taken at the **first minute** of each class period (lecture, tutorial, and lab). The policy for considering attendance is as follows (please take serious note of this):

* If you are present at the time of taking attendance (in your **official section**) you are considered **present**.
* If you arrive late for your official section, then you are counted as **half-present**, so long as you arrive before mid-session (i.e. within the first 25 minutes); if you arrive later than that, then you are counted as absent.
* If you arrive at the time of taking attendance in a section other than yours, then you are counted as **half-present**; if you arrive later than that, then you are counted as absent.
* If you are absent with a valid excuse, you must bring the original excuse within one week for it to be counted.

Students who absent themselves during a semester for more than 25% of the required number of lectures will not be allowed to continue the course, denied from sitting for the final examination, and assigned a course grade of DN, which is reported in their transcript. Note, please make note of the important college decision below regarding attendance during the first day of classes.

> *"10. The deprivation from entering the final exam due to the absence (25% including lectures, tutorials, and labs) is calculated from the first week."*

Class Discussion

Communication is very important in achieving collective goals and objectives. Feel free to voice your opinions and ask questions anytime during a class period. Practice your right and freedom to learn.

Help Sessions

Help sessions will be organized at convenient times as needed upon request from students.

Make-up Tests and Late Homework Policy

No makeup test will be given and late homework will not be accepted unless the reason is beyond the student's control. A valid, official excuse must be presented.

Expected Behavior

Practicing engineers are expected to conduct themselves in an ethical and professional manner. This includes attending all class activities; meeting deadlines; observing common courtesies to fellow students, teachers, and staff; being honest; making a diligent effort to learn; and not engaging in any disruptive, irresponsible manner. Legitimate collaboration is encouraged but academic dishonesty will not be tolerated.

Assessment and Evaluation

Many aspects of the course will receive on-going, real-time assessments and feedback to help improve students' performance. This will be done by discussing performance in class and by arranging individual meetings.

Assessment in the following areas will be converted to points, to compute your final grade in the course:

Assessment Item	Comment	Points*
Attendance	Used only to assess denial status	0%
Quizzes	Assigned once every 2-3 weeks	5%
Project	One semester project; Due end of 12th Acad. Week: **Saturday, Apr. 19, 2025 (21/10/1446H)***	25%
Lab activities	Participation; Reports; Quizzes	10%
Midterm	One midterm (End of 6th Acad. Week): **Midterm: Saturday, Feb. 15, 2025 (16/8/1446H)***	20%
Final Exam	Exams period (Exams Week 2): **Sunday, May 18, 2025 (20/11/1446H): 8:00 – 10:00 AM**	40%

* Tentative

Course Curriculum:

Course topics*:

1.	Introduction to IS development	(1 week)
2.	Database modeling and design	(4 weeks)
3.	Structured analysis and functional architecture design	(3 weeks)
4.	Informational architecture and logical design	(1 week)
5.	Object-oriented analysis and design (UML)*	(4 weeks)
6.	E-business and web-enabled database*	(1 week)

Lab topics*:

1. Training Module 1: Building a Functional Model using IDEF0, DFD (MS Visio)

2. Training Module 2: Modeling Entity Relationship Diagram (ERD) (MS Visio)

3. Training Module 3: Building Database (MS Access)

4. Training Module 4: Creating User Interface: Forms (MS Access)

5. Training Module 4: Creating User Interface: Queries, Reports (MS Access)

6. Training Module 5: Creating Unified Modeling Language (UML) Models (MS Visio)*

* Tentative