**Kuwait University**
**College of Business Administration**
**Information Systems and Operations**
**Management Department**

جامعة الكويت
KUWAIT UNIVERSITY

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# Course Syllabus
## ISOM 337 Enterprise Architecture, Systems, and Technologies
## Dr. Zainab M. AlQenaei
## Spring 2023

**Lecture Time and Location:**
**ISOM 337 / 01A** : Sun Tues Thurs     09:00 AM – 09:50 AM          Room C2 1022

**Contact Information:**

| | |
|---|---|
| **Location** | : ISOM Department – 2nd Floor – Office No. A2 1037 |
| **Email** | : zmalbader@gmail.com |
| **Office Phone** | : (965) 2498 8683 |
| **Office Hours** | : Sun Tues Thurs 11:00 AM – 11:45 AM    or by email appointment |
| **Social Media** | : @zmalbader |

**Course Description:**

This course emphasizes the role of enterprise architecture (EA) in aligning business and information technology (IT) by linking the mission, strategy, and processes of an organization to its IT strategy. The course helps students understand the enterprise from various views, including enterprise architecture (EA), systems, and information technology (IT) views. The EA view introduces students to various levels of architecture (e.g., strategic, tactical, operational, etc.) and sub-architectures (e.g., business, information, application architecture, security, social, etc.). The systems view provides students with an understanding of how IT and systems integrate business information and processes across functional areas and across organizational boundaries. The IT view (i.e., IT architecture) helps students to specify IT resources (e.g., the Internet and networking, client-server architecture, cloud computing, mobile computing, software as a service, social media, etc.) that can be organized to support the organization's operating model and information vision.

**Course Learning Objectives (CLOs):**

The learning outcomes for this course, listed below, relate to the learning goals of the College of Business Administration Undergraduate Program. Upon successful completion of the course, students will be able to:

**CLO1.** Explain the role of IT in shaping and delivering business goals and strategies.
**CLO2.** Understand the concepts and components of EA.
**CLO3.** Compare and choose contemporary frameworks for EA analysis and decision making.
**CLO4.** Understand the importance of effective governance plan (e.g., objectives, administration and maintenance, policies, support, stakeholders) for successful EA development and adoption.
**CLO5.** Understand the architecture continuum and the relationship between processes, applications, technology and solution architectures.
**CLO6.** Analyze the differences and similarities between core elements of an IT infrastructure solution (e.g., client-servers, networking, systems software, cloud computing, social media, virtualization, etc.).
**CLO7.** Effectively communicate concepts related to enterprise and IT architectures analysis and design to stakeholders.

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**CLO Mapping to CBA Skill Based Competency Goals[1]**

| CLO | Competency Goal | | | | |
|---|---|---|---|---|---|
| | Analytical | Communication | Information Technology | Business Ethics | General Business Knowledge |
| 1 | | | | | R |
| 2 | | | I | | |
| 3 | | A | | | R |
| 4 | | | I | | I |
| 5 | | | I | | |
| 6 | A | | | | I |
| 7 | | R | | | |

**Type of Emphases:**

- **(I)ntroduce:** Students will be introduced to the skill and their grasp of it assessed in the course.
- **(A)pply:** The course will not cover the skill. Students should have a high-level grasp of the skill and are required to apply it in the course.
- **(R)einforce:** Students should have an introductory-level grasp of the skill and the course will improve their mastery to a higher level.

**Required Material:**

**Textbook**           : Manish Agrawal & Clinton Daniel (2021) Business Data Communications and
                         IT Infrastructures, 3rd Edition, Prospect Press
**Additional Material** : Other material is available on Moodle
**E-Learning System**   : MS Teams and Moodle Learning Management System
**Course Website**      : https://moodle.ku.edu.kw/login/index.php

**Course Requirements and Policies:**

**Tests:** There are total of three tests (lowest will be dropped). These tests are scheduled on the due dates of the respective chapters. No make-up tests will be given.

**Grades:** After a grade is posted, you will have two days to discuss your assignment, quiz, presentation, or absence with your instructor or teaching assistant. After that, the grade is final.

**Emails:** Emails sent must include a subject, be addressed properly, and signed with full name, course and section number. Otherwise, the email will be discarded. Email etiquette could be accessed online upon request.

**Class Preparation:** It is very important that students are prepared for each class period. Check MS Teams before each class for the required reading or video.

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CBA Competency Goals can be found at the end of this document [1]

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**Nepotism:** By registering for this class, you agree to abide by all its regulations including the zero tolerance of nepotism. By agreeing to this rule, you understand that your grade will be decreased a full letter grade (that is: goes from an "A" to a "B" for example) if anyone (family, friends, etc.) attempts to influence your grade (with or without your knowledge).

**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://kuweb.ku.edu.kw/cs/groups/ku/documents/ku_content/kuw055940.pdf

Participation will be assessed in each class period. Your class participation and attendance will both contribute to your overall grade. Be on time for the lecture. At the beginning of each lecture, attendance will be taken, anyone coming after that time will be considered as late. Being late three times is equivalent to one absence. Absence with a valid excuse will still count as an absence.

Students must attend the classes they are enrolled in (i.e., no informal switching between sections for the same faculty member or between different faculty members).  The same is applied to taking any form of exams or tutorials.

**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:
http://kuweb.ku.edu.kw/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. Tools may be used include E-plagiarism system (Turnitin: www.turnitin.com) and Cloud system (OneDrive of Microsoft). If you have any questions about what constitutes "unauthorized assistance" please email me before the deliverable is submitted.

**Mobiles:** Students should turn their mobile silent at the beginning of each class.

**Special Needs:** If you are a special needs student (have any disability), please inform your instructor.

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

**Make-up:** No make up for tests.  Exams will be executed according to plans.  In case Moodle fails for uncontrolled reasons, the exam will be re-scheduled. If you have Covid (during Final Exam time), then submit documentation of PCR/Civil ID to decide on your case. For the tests, if your documentation is approved, you will be invited to complete a makeup. For the Final, if your documentation is approved, an "I" (Incomplete) will appear in the KU portal and you will be invited to complete the makeup the first week of the following academic term. You must inform your instructor and share the results of a PCR test before and exam to be eligible for a make-up.

**Book Ordering:** BUSINESS DATA COMMUNICATIONS AND IT INFRASTRUCTURES, Edition 3.0 by Manish Agrawal & Clinton Daniel, Prospect Press, copyright 2021.

eBook:
ISBN: 9781943153787
Student Price: $52.50
Includes all chapters and three supplementary chapters.
Available from RedShelf or VitalSource

Paperback:
ISBN: 9781943153794
Student Price: $76.25 (+ shipping)
Includes 14 chapters only. Three supplementary chapters are downloadable at no charge from the Student Resources page at ProspectPressVT.com.
Available from: RedShelf

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

| Weight | Description |
|--------|-------------|
| 5% | Attendance, Discussion, and Participation |
| 10% | Tests (best 2 out of 3) |
| 20% | Group Project |
| 25% | Hands-on Exercises |
| 40% | Final exam |
| **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 |

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**Course Outline:**

| Subject | Chapter | Main Topics |
|---------|---------|-------------|
| **Introduction** | 1 | Definition, technology milestones, packetization, layering, TCP/ IP model, OSI model, principles of Internet protocols |
| **Physical Layer** | 2 | Functions of the physical layer, physical media, properties of signals, binary signals, signal representation of data, multiplexing |
| **Data-link Layer** | 3 | Functions of the data-link layer, Ethernet overview, CSMA/CD, error detection and correction, Ethernet frame structure, switches |
| **Network Layer** | 4 | Functions of network layer, Internet protocol (IP), binary numbers, IP version 6 |
| **Transport Layer** | 5 | TCP functions, segmentation, reliability, flow-control, multiplexing, connection establishment, TCP header, UDP |
| **Application Layer** | 6 | Overview, the Web, E-mail, FTP. |
| **Support Services** | 7 | Dynamic host configuration protocol (DHCP), non-routable addresses, Network address translation, Address resolution protocol, Domain name system (DNS) |
| **Network Security** | 11 | Role of network security, vulnerabilities, threats, network security controls for outgoing and incoming information |
| **Managerial Issues** | 14 | Network design, network management technology standards, role of government and legal process |
| **IT Services Delivery** | 17 | IT services management, service delivery disciplines, high availability concepts and architectures, business continuity and disaster recovery |

**Important Dates:**

| Date/Time | Event |
|-----------|-------|
| March 16th, 2023 | Last to Withdraw |
| April 30th, 2023 | Final Project |
| May 4th, 2023 | Last day of classes |
| May 16th, 2023 (11 am – 2 pm) | Final Exam |

**CBA Vision:**
To be the leading provider of quality business education in the region.

**CBA Mission:**
As part of Kuwait University, the leading national institution of higher education, the College of Business Administration is committed to providing quality business education, engaging in research and community services to contribute to the socio-economic development of the country.

**CBA Competency Goals:**

**1.     Analytical Competency:** A CBA graduate will be able to use analytical skills to solve business problems and make a well-supported business decision.
**Student Learning Objectives:**
1.1.  Use appropriate analytical techniques to solve a given business problem.
1.2.  Critically evaluate multiple solutions to a business problem.
1.3.  Make well-supported business decisions.


**2.     Communication Competency:** A CBA graduate will be able to communicate effectively in a wide variety of business settings.
**Student Learning Objectives:**
2.1.  Deliver clear, concise, and audience-centered presentations.
2.2.  Write clear, concise, and audience-centered business documents.


**3.     Information Technology Competency:** A CBA graduate will be able to utilize Information Technology for the completion of business tasks.
**Student Learning Objectives:**
3.1.  Use data-processing tools to analyze or solve business problems.


**4.     Ethical Competency:** A CBA graduate will 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:**

4.1.  Identify the ethical dimensions of a business decision.
4.2.  Recognize and analyze the tradeoffs created by application of competing ethical perspectives.
4.3.  Formulate and defend a well-supported recommendation for the resolution of an ethical issue.


**5.     General Business Knowledge:** A CBA graduate will be able to demonstrate a basic understanding of the main business disciplines' concepts and theories.
**Student Learning Objectives:**
5.1.  Acquire a fundamental understanding of knowledge from the main business disciplines (e.g. finance, accounting, marketing, and management information systems, among others).