**Course Syllabus**

**ISOM 440 Business Data Mining**

**Dr. Zainab M. AlQenaei**

**Spring 2021**

**Lecture Time and Location:**

**ISOM 340 / 01A**  :Sun Tues Thurs 12:00 PM – 12:50 PM Room B1 1024

**Contact Information:**

**Location** :ISOM Department – 2nd Floor – Office No. A2 1037

**Email** : zalbader@mis.cba.edu.kw

**Office Phone** : (965) 2498 8683

**Office Hours** : Sun Tue Thu 11:00 AM – 11:50 AM or by appointment MS Teams Online

**Twitter Account** : @zmalbader

**Course Description:**

Students will learn how to apply data mining principles to the dissection of data sets, including those in large databases, data warehouses, or through web mining. Students will also learn to innovatively explore, analyze and leverage data and turn it into valuable, actionable information for organizations. This course will cover the major techniques (e.g. classification, clustering, neural networks) for data mining to discover interesting patterns, extract useful knowledge, and support decision-making. Students will also have hands-on experience on using data mining tools (e.g. BI, SPSS, Excel).

**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:

1. Understand various data mining techniques.
2. Differentiate between business situations for applying different data mining techniques.
3. Select and apply appropriate data mining tool for solving business problems.
4. Evaluate the performance of data mining solutions.
5. Leverage data mining tools to make informed managerial recommendations for businesses.

**CLO Mapping to CBA Skill Based Competency Goals[[1]](#footnote-1)**

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

**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** : Tan, P., Steinbach, M., Karpatne, A., Kumar, V. (2019). Introduction to Data

Mining. Pearson. Second Edition. ISBN-13: 9780133128901

**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:**

**Lab Exercises:** There are individual lab exercises. These exercises need to be submitted through Moodle by **9:00 PM** on the due dates. Late submission is not accepted.

**Grades:** After a grade is posted, you will have one week 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 on: http://is.cba.edu.kw/130/email.htm.

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

**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://www.kuniv.edu/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. Each student is allowed three absences (no questions asked), after that, each absence will result in an automatic deduction of 0.5 points per extra absence from your overall grade.

**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://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. If you have any questions about what constitutes “unauthorized assistance” please email me before the deliverable is submitted.

**Mobiles:** Students are expected to turn off notifications 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.

**Grading:**

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

|  |  |
| --- | --- |
| **Weight** | **Description** |
| 10% | Discussion and Participation |
| 15% | Lab Exercises |
| 15% | Project: Proposal |
| 20% | Project: First Draft |
| 40% | Project: Final Draft |
| **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:**

|  |  |  |
| --- | --- | --- |
| **Week** | **Topic** | **Assignment** |
| 1 | Introduction to Business Data Mining |  |
| 2 | Data Mining Process | Project Proposal |
| 3 | Data Cleaning and Preparation | Lab 1 |
| 4 | Classification:  Basic Concepts and Techniques | Lab 2 |
| 5 | Classification:  Alternative Techniques | Lab 3 |
| 6 | Association Analysis:  Basic Concepts and Algorithms | Lab 4 |
| 7 | Association Analysis:  Advanced Concepts | Lab 5 |
| 8 | Cluster Analysis:  Basic Concepts and Algorithms | Project First Draft |
| 9 | Cluster Analysis:  Additional Issues and Algorithms |  |
| 10 | Anomaly Detection |  |
| 11 | Avoiding False Discoveries |  |
| 12 | Data Mining Application:  Project |  |
| 13 | Data Mining Application:  Project | Project Final Draft |
| 14 | Final Presentations |  |
| 15 | Final Presentations |  |

**Important Dates**

|  |  |
| --- | --- |
| **Date/Time** | **Event** |
| April 29th, 2021 | Last day to withdraw course |
| July 1st, 2021 | Last day of classes |
| July 6th, 2021 | Final Project Presentations |

**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. Use appropriate analytical techniques to solve a given business problem.
  2. Critically evaluate multiple solutions to a business problem.
  3. Make well-supported business decisions.

1. **Communication Competency:** A CBA graduate will be able to communicate effectively in a wide variety of business settings.

**Student Learning Objectives:**

* 1. Deliver clear, concise, and audience-centered presentations.
  2. Write clear, concise, and audience-centered business documents.

1. **Information Technology Competency:** A CBA graduate will be able to utilize Information Technology for the completion of business tasks.

**Student Learning Objectives:**

* 1. Use data-processing tools to analyze or solve business problems.

1. **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:**

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

1. **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:**

* 1. Acquire a fundamental understanding of knowledge from the main business disciplines (e.g. finance, accounting, marketing, and management information systems, among others).

1. CBA Competency Goals can be found at the end of this document [↑](#footnote-ref-1)