Dillard College of Business Administration
SYLLABUS: Introduction to Business Analytics
MIS 5113, Section X40
Summer II 2024

Contact Information
Instructor: Dr. Grace Zhang, Professor of Management Information Systems
Zoom meeting can be requested by appointment with the link: Zoom Virtual Meeting
Texting or Cell: (206)-724-1509
Email: grace.zhang@msutexas.edu

Course Materials:
- *Analytics, Data Science, & Artificial Intelligence: Systems for Decision Support, **11th edition***, by Ramesh Sharda, Dursun Delen, Efraim Turban. Pearson Publishing.
- Lecture notes and other materials will be provided in class and on D2L. D2L is the primary communication channel for the course.
- Codecademy FREE account to finish the Learn SQL course at: https://www.codecademy.com/learn/learn-sql
- RapidMiner Studio is **required** for most hands-on assignments. RapidMiner Studio can be downloaded with a one-year **educational** license for FREE. Please use your .edu email address to sign up at the official download page and make sure to choose "educational purpose."
- In addition, you need to access to https://academy.rapidminer.com/learn/course/machine-learning-professional/introduction/welcome?page=1 for hands-on tutorials. The best approach for finishing all tutorials is to start with an academy account (different from your RapidMiner product account), such that your progress can be tracked.

Course Description:
This course provides an overview of the business analytics ecosystem with introductions to three types of analytics: descriptive, predictive, and prescriptive. Applications and tools of business analytics are the focus. In addition, data foundations, as well as big data concepts, are also discussed.

Course Prerequisite:
Consent of the Graduate Coordinator.

Learning Goals
I. **General Learning Goals**:
- **Our students will produce creative responses to business situations**. The class assignments require students to apply analytics to respond to a real-world business data scenario. Descriptive, predictive, and prescriptive tools will be covered in various chapters, e.g., SQL and RapidMiner.

These general learning goals are among those established by the Dillard College of Business Administration. General learning goals represent the skills that graduates will carry into their careers. While assessing student performance in obtaining these general learning goals, Dillard College is assessing its programs. The assessments will assist us as we improve our curriculum and curriculum delivery.

II. **Course-Specific Learning Goals**: After completing this course, students should be able to:
- Understand the several types of analytics and review selected applications
- Learn about descriptive and inferential statistics
- Understand the importance of data/information visualization
- Learn the standardized data mining processes
- Learn different methods and algorithms of data mining for predictive analytics
- Understand different methods and algorithms of machine learning for predictive analytics
- Become familiar with several types of deep learning methods for predictive or cognitive analytics
- Know the process of text mining for business analytics
- Understand the applications of prescriptive analytics techniques using optimization and simulation
- Become familiar with the wide range of enabling technologies for Big Data analytics
- Complete RapidMiner Machine Learning Certification and Learn SQL in Codecademy.

Course Policies
Missed Examination, assignments, and class activities Policy: This is an online course spanning only five weeks. Therefore, we need to emphasize self-study and planning on finishing course assignments. An ample time window will be provided to take exams and complete tasks. **Written verification is mandatory for late or missing work**. The instructor must be contacted by the day of the scheduled activity, or makeup will NOT be allowed. A deduction may be assessed for a late exam or assignment at the instructor's discretion.

Grading and Evaluation: Students' performance will be assessed using the following elements.
1. **Exams (3)**: D2L Exams are in the format of the open book and open references. However, the exam will be proctored by Respondus Monitoring Program, you might need a second device since the exam is conducted on a lockdown browser. No cellphone or camera apps are allowed during the exam. The exam will be **auto-submitted** once time runs out.
2. **Online learning hands-on**: Online learning videos for hands-on exercises are required every week using RapidMiner Studio. Students are responsible for walking through the learning demonstrations. There is also a certification test at the end of the semester.
3. **Codecademy SQL online learning**: Students are required to finish the "Learn SQL" unit. Please only work on the FREE portion of the courses.

4. **Participation**: Class participation in all formats (questions, answers, comments, and feedback) is highly encouraged to achieve a good participation grade.

Points will be allocated using the following scheme:

Element	Points
Exam (3)	60
Rapid Miner Online Learning Hands-on	18
Codecademy SQL Learning Unit	10
Rapid Miner Machine Learning Certificate	10
Participation	2
Total Points	100

Course Content and Outline: See the attached content outline/tentative schedule.

Academic Integrity
Students are referred to as the "Student Honor Creed" of the Midwestern State University Graduate Catalog regarding academic honesty. Academic dishonesty (cheating, collusion, and plagiarism) is taken seriously and will be investigated. The minimum penalty is an "F" in this course and referral to the Dean of Students for disciplinary action, resulting in expulsion from the University. **All assignments and exams are expected to be done individually unless stated otherwise. Sharing computer files to assist another student is considered a violation of academic integrity for BOTH students.**

Americans with Disabilities Act
Suppose a student has an established disability defined in the Americans with Disabilities Act and would like to request an accommodation. In that case, that student should please contact me as soon as possible (i.e., within the first week of the semester). This class follows the guidelines suggested by the Center for Counseling and Disabilities Services for those students who qualify for disability services. Please refer to the details in the Midwestern State University Graduate Catalog.

Syllabus Change Policy
This syllabus is a guide for the course and is subject to change. It is not a contract. Syllabus changes will be communicated by notification on D2L and may or may not result in document changes. The student's sole responsibility is to find out if anything affecting the course requirements has changed. **Please check D2L and school emails regularly!**

Tentative Schedule: Please keep this syllabus as a reference!

Week	Date	Day	Chapter	Topic	Dues
1	8/Jul	Monday	1	Overview of Business Intelligence, Analytics, Data Science, and AI	
	9/Jul	Tuesday	1	Overview of Business Intelligence, Analytics, Data Science, and AI	Self introduction & Syllabus Quiz
	10/Jul	Wednesday	3	Nature of Data, Statistical Modeling, and Visualization	RapidMiner Machine Learning (ML) Professional Course - Welcome
	11/Jul	Thursday	3	Nature of Data, Statistical Modeling, and Visualization / SQL Supplement	**Codecademy Learn SQL Unit Completion**
2	15/Jul	Monday		**Exam 1 Chapter 1, 3, and basic SQL**	
	16/Jul	Tuesday	4	Data Mining Process, Methods, and Algorithms	RM ML Course - Getting Started
	17/Jul	Wednesday	4	Data Mining Process, Methods, and Algorithms	RM ML Course - Intro to ML (part 1)
	18/Jul	Thursday	5	Machine-Learning Techniques for Predictive Analytics	RM ML Course - Intro to ML (part 2)
3	22/Jul	Monday	5	Machine-Learning Techniques for Predictive Analytics	RM ML Course - Supervised Learning (part 1)
	23/Jul	Tuesday	6	Deep Learning and Cognitive Computing	RM ML Course - Supervised Learning (part 2)
	24/Jul	Wednesday	6	Deep Learning and Cognitive Computing	RM ML Course - Supervised Learning (part 3)
	25/Jul	Thursday		**Exam 2 Chapter 4, 5, and 6**	
4	29/Jul	Monday	7	Text Mining, Sentiment Analysis, and Social Analytics	RM ML Course - Scoring
	30/Jul	Tuesday	7	Text Mining, Sentiment Analysis, and Social Analytics	RM ML Course - Unsupervised Learning (part 1)
	31/Jul	Wednesday	8	Prescriptive Analytics: Optimization and Simulation	RM ML Course - Unsupervised Learning (part 2)
	1/Aug	Thursday	8	Prescriptive Analytics: Optimization and Simulation	RM ML Course - Feature Engineering
5	5/Aug	Monday	9	Big Data, Cloud Computing, and Location Analytics: Concepts and Tools	RM ML Course - Auto Model
	6/Aug	Tuesday	9	Big Data, Cloud Computing, and Location Analytics: Concepts and Tools	Makeups and Reviews
	7/Aug	Wednesday		**Exam 3 Chapter 7, 8, and 9**	
	8/Aug	Thursday		**RapidMiner ML professional certification test**	