Dillard College of Business Administration
SYLLABUS: Introduction to Business Analytics
MIS 5113, Section X40 and X41
Summer II 2022

Contact Information
Instructor: Dr. Grace Zhang, Professor of Management Information Systems
Office Hour: By appointment.
Zoom meeting: By appointment. Here is the meeting link: Zoom Virtual Meeting (password: 5113)
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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.
- 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: https://rapidminer.com/products/studio/

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 different 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 different 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 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 no later than the day of the scheduled activity, or no makeup will 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. 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.

Points will be allocated using the following scheme.

Element	Points
Exam (3)	60
Rapid Miner Online Learning Handson	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/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 two weeks of the semester). Refer to my office hours and phone number shown on page 1. 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!

MIS 5113 Internet Section

Course Content Outline & Schedule of Topics/Exams

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