Dillard College of Business Administration
SYLLABUS: Introduction to Business Analytics
MIS 5113, Section 270, Spring 2022
M 5:30 pm – 6:50 pm
DB 306

Contact Information
Instructor: Dr. Grace Zhang, Professor of Management Information Systems
Office Hour: DB 273, MW 9:30-11:30 am, TR 11:00-11:30 am, or by appointments
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.
- 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 on 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 exhibit the characteristics of leadership.** The class group project requires students to evaluate each team member based on the DCOBA common rubric. The leadership rubric includes participation, teamwork, organization skills, character, and communication items.
- **Our students will produce creative responses to business situations**. The group project requires students to apply analytics to respond to a real-world business scenario. Various case discussions and assignment activities will also require students to respond to business situations.
- **Our students will communicate at a professional level.** The group project requires a formal team presentation and a final paper. The presentation will be graded according to DCOBA common oral communication rubrics. The project paper will follow the course-embedded paper requirements.

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

Course Policies

Missed Examination, assignments, and class activities Policy: This hybrid class meets once a week. Therefore, we need to prepare for additional self-study and work time outside the classroom. An ample time window will be provided to take exams, finish in-class/online activities, and submit assignments. <u>Written verification is mandatory for late or missing work</u>. 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.
3. **D2L Assignments**: Individual course assignments will be posted in D2L. Students are required to explore options of data analysis, model building, and evaluation.
4. **Group Project:** Students work in groups to apply business analytics to a real-world business scenario. Details of the project requirements will be provided in a separate project requirement document.

5. **Attendance and Participation**: Absences will be excused only for approved school trips and severe health issues. Class participation in all formats (questions, answers, comments, and feedback) is highly encouraged to achieve a good participation grade. **Individual case discussions will be assigned accordingly.**

   If you need to Zoom into a class session for specific reasons, please contact the instructor in advance. Zoom Meeting access with **both webcam and microphone ready** if you are joining the class remotely. A clear video of you is required for remote attendance records. Here is the meeting link: [Zoom Virtual Meeting](#) (password: 5113)

Points will be allocated using the following scheme.

Element	Points	Grades will be assigned using the following scheme	
Exam (3)	40	A	90-100
RapidMiner Online Learning Handson	25	B	80-89
D2L Assignments	10	C	70-79
Group Project	15	D	60-69
Attendance and Participation	10	F	<=59
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 is 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.

Campus Carry
Senate Bill 11 passed by the 84th Texas Legislature allows licensed handgun holders to carry concealed handguns on campus, effective August 1, 2016. Areas excluded from concealed carry are appropriately marked, following state law. For more information regarding campus carry, please refer to the University's webpage for [details](#). If you have

questions or concerns, please contact MSU Chief of Police Patrick Coggins at patrick.coggins@mwsu.edu.

Midterm Progress Report
To help students keep track of their progress toward course objectives, I might provide a "Midterm Progress Report" through the student's WebWorld account. The reported grade will be ONLY for at-risk students identified around the Midterm. The midterm grades will not be reported on the students' transcript, nor will they be calculated in the cumulative GPA. They give students an idea of where they stand at the semester's midpoint. Students earning below a C at the midway point should schedule a meeting with the professor to plan for improvement during the rest of the semester.

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	In Class Topic	Rapid Miner Assignments	Class Assignments
MIS 5113-270 Hybrid Course						
1	10-Jan	M	1	Overview of Business Intelligence, Analytics, Data Science, and Artificial Intelligence		
	16-Jan	S			RapidMiner installation, Academy Overview, Machine Learning (ML) - Welcome	Syllabus Quiz, Self Introduction,
2	17-Jan	M		MLK holiday		
	23-Jan	S			ML Course - Getting Started	
3	24-Jan	M	3	Nature of Data, Statistical Modeling, and Visualization		
	30-Jan	S			ML Course - Intro to ML (part 1)	
4	31-Jan	M	3	Nature of Data, Statistical Modeling, and Visualization / SQL supplement		
	6-Feb	S			ML Course - Intro to ML (part 2)	Assignment 1
5	7-Feb	M	4	Data Mining Process, Methods, and Algorithms		
	13-Feb	S				**Exam 1 - Chapter 1, 3 and SQL**
6	14-Feb	M	4	Data Mining Process, Methods, and Algorithms		
	20-Feb	S			ML Course - Supervised Learning (part 1)	
7	21-Feb	M	5	Machine-Learning Techniques for Predictive Analytics		
	27-Feb	S			ML Course - Supervised Learning (part 2)	
8	28-Feb	M	5	Machine-Learning Techniques for Predictive Analytics		
	6-Mar	S			ML Course - Supervised Learning (part 3)	Asignment 2
9	7-Mar	M	6	Deep Learning and Cognitive Computing		
	13-Mar	S			ML Course - Scoring	Project Proposal
10	14-Mar	M		Spring break		
	20-Mar	S				
11	21-Mar	M	6	Deep Learning and Cognitive Computing		
	27-Mar	S				**Exam 2 - Chapter 4-6**
12	28-Mar	M	7	Text Mining, Sentiment Analysis, and Social Analytics		
	3-Apr	S			ML Course - Unsupervised Learning (part 1)	
13	4-Apr	M	7	Text Mining, Sentiment Analysis, and Social Analytics		
	10-Apr	S			ML Course - Unsupervised Learning (part 2)	
14	11-Apr	M	8	Prescriptive Analytics: Optimization and Simulation		
	17-Apr	S			ML Course -Feature Engineering	Assignment 3
15	18-Apr	M	8	Prescriptive Analytics: Optimization and Simulation		
	24-Apr	S			ML Course - Auto Model	
16	25-Apr	M	9	Big Data, Cloud Computing, and Location Analytics: Concepts and Tools		
	1-May	S				**Exam 3 - Chapter 7-9**
Final	4-May	W		**Project Presentation**	**ML professional certification test**	**Project Paper**