Dillard College of Business Administration

Syllabus: Analytics for Business Decision-Making
MIS 4233 Section 201: MW 9:30 AM – 10:50 AM in DB 335
Spring Semester 2025

Contact Information

Instructor: Jie Zhang, Associate Professor of Management Information Systems
Office: Dillard Building 218
Office hours: Monday 11:00 AM to 12:00 PM and 2:00 PM to 3:30 PM; Tuesday 1:30 PM to 3:00 PM; Wednesday 11:00 AM to 12:00 PM; other time by appointment.
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Required Course Materials

1. Required textbook: Business Analytics: Communicating with Numbers. 2nd Ed. Jaggia (2023) ISBN10: 1264302800 | ISBN13: 9781264302802.
2. Required software: JupyterLab with Python 3; Microsoft Office local installation (not cloud-based).
3. You must have access to a computer with a webcam that allows you to install needed software, access the course materials, and complete assigned tasks. Please see page 53 on the University return to campus report for the standard computer requirements. (Chromebooks won't work due to insufficient computing power.)

Course Description

This course covers predictive and prescriptive analytics methods for solving business problems. Topics include regression, forecasting with time series data, simulation, and optimization.

Course Prerequisite(s)

BUAD 3033.

Notice: University-assigned student email accounts to be used for all official MSU Texas communication

The university-assigned (my.msutexas.edu) email address is required to receive all official communication from Midwestern State University. The university-assigned student email account is Midwestern State University's official means of email communication with all students. Students are responsible for all official information sent to their university-assigned email account. Students are expected to check their email regularly and are responsible for all information sent to them via their university-assigned email address. **Please make sure you check your my.msutexas.edu email for email communication regarding this course. When you email me, please also use your my.msutexas.edu email.**

Learning Goals

I. General Learning Goals:

- Problem-solving and decision-making abilities through critical analysis, evaluation, and interpretation of business information. Students will analyze business cases and make business decisions based on the analysis results.
- Competency in writing for common business scenarios. Written assignments are expected to accurately communicate the analysis results and shouldn't contain any grammatical or punctuation errors.
- Technology Utilization. Class lectures, demonstrations, and activities involve expanded coverage of information technology, such as data analysis with Python and Microsoft Excel.

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 with them into their careers. While assessing student performance in obtaining these general learning goals, the Dillard College is assessing its programs. The assessments 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 and apply logistic regression analysis techniques
- Develop time series forecasting models and assess their performance
- Implement k-Nearest Neighbors (KNN) for classification
- Build and analyze spreadsheet models
- Simulate uncertain systems to model risk and make informed decisions
- Formulate and solve optimization problems

Course Policies

Attendance Policy: Regular attendance is expected and roll will be taken. Upon a student's fifth unauthorized absence, that student can be dropped for nonattendance and receive a grade of WF for the course. Participation in class is mandatory. Students must read the assigned material and complete assignments prior to coming to class and be prepared to discuss and ask questions relating to the assigned materials. See the MSU Student Handbook for the University Class Attendance Policy.

Missed Exams, Homework, and Activities Policy: Only students with conflicts involving authorized University activities or having verified medical circumstances may ask in advance to make up missed examinations, homework, and/or activities. Written verification, in either case, is mandatory. Arrangements must be made in advance if at all possible. At the instructor's discretion, a deduction may be assessed for a late exam, assignment, or activity.

Assignments: Assignments are due before the beginning of class on the specified due date. There is NO PROVISION for late work on any assignment. Plan and schedule to complete work early. Having your work completed on schedule is a key to early success in your business career.

Grading and Evaluation

Exams (3): Exams will cover assigned readings and practices, in-class lectures, and any other assigned work.

Activities: Up to 40 points will be assigned to activities. Any points not assigned during the semester will be removed from the total possible for the course when calculating grade percentages.

Homework assignments: Up to 60 points will be assigned to homework. All homework assignments are individual homework (not team/group work) unless explicitly announced otherwise by the instructor. Any points not assigned during the semester will be removed from the total possible for the course when calculating grade percentages.

Table 1: Points allocated to each element

Element	Points
Exam 1	100
Exam 2	100
Final Exam	100
Activities	40
Homework assignments	60
Total Points	400

Table 2: Grading System

Grade	Points
A	360 or greater
B	320 to 359
C	280 to 319
D	240 to 279
F	Less than 240

Grades will be based on the recorded points only. Personal reasons (e.g., technical problem at a student's end, need a specific grade to graduate, to keep financial aid, to keep straight A record, etc.) are not considered in the grade calculation.

In order to help students keep track of their progress toward course objectives, the instructor for this class will provide a Midterm Progress Report through Navigate. Midterm grades will not be reported on students' transcripts or calculated in the cumulative GPA. They simply give students an idea of where they stand at the midpoint of the semester. Students earning below a C at the midway point should schedule a meeting with the professor to discuss their performance in this course.

Class Policy Regarding the Use of Generative AI Tools (e.g., ChatGPT)

During our class, we may use Generative AI tools such as ChatGPT in some activities/assignments. You will be informed which activities/assignments these tools are permitted to be used. Any use outside of this permission constitutes an academic integrity violation.

Academic Integrity

With regard to academic honesty, students are referred to the "Student Honor Creed", including the following statements: "We consider it dishonest to ask for, give, or receive help in examinations or quizzes, to use any unauthorized material in examinations, or to present, as one's own, work or ideas which are not on entirely one's own. We recognize that any instructor has the right to expect that all student work is honest, original work. We accept and acknowledge that responsibilities for lying, cheating, stealing, plagiarism, and other forms of academic dishonesty fundamentally rests with each individual student."

Academic dishonesty (cheating, lying, collusion, and plagiarism) will not be tolerated. The term "cheating" generally means representing someone else's work as your own and includes, but is not limited to:

1. Acting with intent to promote or assist cheating, including soliciting, encouraging, directing, or aiding attempts of fellow students to cheat on an exam or an assignment.
2. Soliciting information about exam questions from students who have taken a test.
3. Intentionally or negligently aiding someone taking an exam or quiz.
4. Looking or glancing at another student's exam while the exam is being taken.
5. Soliciting answers of an exam or an assignment from a fellow student.
6. Using any device to record a test, including eyeglasses, cellphones, watches, and calculators, etc.
7. Acquiring an exam or other academic testing material without the express permission of the professor who authored the exam.

8. Copying, disseminating, spreading, circulating, sharing, or publicizing any questions on an exam given for credit.
9. Violation of exam rules and procedures.

Academic integrity violations are grounds for being dropped from this class with an F and referral to the Dean of Students for disciplinary action, which may result in expulsion from the University.

Americans with Disabilities Act

If a student has an established disability as defined by the Americans with Disabilities Act and would like to request accommodation, that student should please contact me as soon as possible. Any student requesting accommodations should first contact Disability Support Services at 940-397-4140 in room 168 Clark Student Center to document and coordinate reasonable accommodations if you have not already done so.

Campus Carry Policy

Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes has prohibited. The new Constitutional Carry law does not change this process. Concealed carry still requires a License to Carry permit, and openly carrying handguns is not allowed on college campuses. For more information, visit Campus Carry.

Syllabus Change Policy:

This syllabus is a guide for the course and is subject to change. Syllabus changes will be communicated in class and may or may not result in document changes. If absent, it is the student's sole responsibility to find out from other students, or the instructor, if anything affecting the course requirements or schedule was announced in the classes missed.

Classroom Behavior:

- Come to class on time. Take care of personal business prior to class. I do not expect you to leave and return to class (unless there was an emergency and you explain it to me after class).
- Computers will remain off during class except as directed by the instructor. Class time is not for surfing the Web, monitoring online social networks, texting, or catching up on email. You will be asked to leave the class if you continually violate this policy. The same thing applies to cell phone usage for messaging during class.
- Turn off your cell phones and any other electronic devices and put them away. Please, no texting. I think we can all go a little over an hour without contact with the outside world! Leaving class to return calls and coming back is not acceptable. If you have an emergency that requires your cell phone to be on, let me know and we'll work something out.
- Dress appropriately and conduct yourself professionally and with respect toward your peers and the instructor. Please don't talk while the instructor or others are discussing course materials. Participating in the class is the best way to avoid disturbing the class.

Course Schedule: Table 3

Week	Date (MM/DD)	Day	Chapter	Topic
1	1/22	Wednesday	Introduction	Class Overview
2	1/27	Monday	7	Chapter 7 Regression analysis (review)
	1/29	Wednesday	8	Chapter 8 More topics in regression analysis
3	2/3	Monday	8	Chapter 8 More topics in regression analysis
	2/5	Wednesday	9	Chapter 9 Logistic Regression
4	2/10	Monday	9	Chapter 9 Logistic Regression
	2/12	Wednesday	9	Chapter 9 Logistic Regression
5	2/17	Monday	9	Chapter 9 Logistic Regression
	2/19	Wednesday	review	Exam1 review
6	2/24	Monday	Exam 1	Exam 1
	2/26	Wednesday	10	Chapter 10 Forecasting with time series data
7	3/3	Monday	10	Chapter 10 Forecasting with time series data
	3/5	Wednesday	10	Chapter 10 Forecasting with time series data
8	3/9 – 3/15		Spring break	No class
9	3/17	Monday	10	Chapter 10 Forecasting with time series data
	3/19	Wednesday	12	Chapter 12 KNN
10	3/24	Monday	12	Chapter 12 KNN
	3/26	Wednesday	15	Chapter 15 Spreadsheet modeling
11	3/31	Monday	review	Exam 2 review
	4/2	Wednesday	Exam 2	Exam 2
12	4/7	Monday	15	Chapter 15 Spreadsheet modeling
	4/9	Wednesday	15	Chapter 15 Spreadsheet modeling
13	4/14	Monday	15	Chapter 15 Spreadsheet modeling
	4/16	Wednesday	16	Chapter 16 Risk analysis and simulation
14	4/21	Monday	16	Chapter 16 Risk analysis and simulation
	4/23	Wednesday	17	Chapter 17 Optimization
15	4/28	Monday	17	Chapter 17 Optimization
	4/30	Wednesday	17	Chapter 17 Optimization
16	5/5	Monday	18	Chapter 18 More applications in optimization
	5/7	Wednesday	review	Exam 3 review
Final	5/12	Monday	Exam 3	Exam 3 (8-10 AM)