Dillard College of Business Administration
Course Syllabus

MIS 3423 Data Visualization

Section 201 and Section Z20, Spring Semester of 2025
TR 9:30 am-10:50 am
DB 324

Contact Information

Instructor: Dr. Grace Zhang, Professor of Management Information Systems
Office Hour: DB 287A, MW 9:30 -11:30 am, TR 11:00 am -12:00 pm, or by appointments
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Course Materials

- ***Introduction to Business Analytics***, By Vernon Richardson and Marcia Watson, McGraw Hill (https://www.mheducation.com/highered/product/introduction-to-business-analytics-richardson.html). This is a REQUIRED textbook.
- **MSU TX D2L** access to Course Content, Assessments, Assignments, Grades, Mail, Announcement, and so on. We will use D2L as the primary communication channel for the class.
- We mainly use **Microsoft Power BI Desktop** (https://www.microsoft.com/en-us/download/details.aspx?id=58494). It is free software for **Windows PC**, and you need to use your **Microsoft 365 account** to sign in. It is available in Dillard labs.
- **Tableau** is another software we use in the course. You can get a one-year free license of Tableau Desktop using your .edu email account (https://www.tableau.com/academic/students). It is available in Dillard labs.
- Zoom students can access the class via the link https://msutexas-edu.zoom.us/j/93033869779). Please **present yourself professionally** through webcam and microphone during the class sessions for questions and answers. In addition, make sure you have the correct software set up on your own device to use EXCEL, Power BI, and Tableau.

Course Description

This course provides an in-depth look at data visualization, blending theory and practice. Students will learn design fundamentals and how to use quantitative data to improve decision-making. The course includes lectures, real-world examples, and hands-on software experience.

Learning Goals

General Learning Goals:

- **Problem Solving and Decision Making**. Lab exercises and chapter assignments from the textbook will be assigned. These assessments require students to utilize technology to gather relevant formation and practice related data analysis with visualization. These graded assessments are a portion of the overall course grade.
- **Technology Utilization**. Extensive use of technology is throughout the course. Data visualization technology (EXCEL, Power BI, Tableau) will be the primary coverage. Students will also demonstrate their ability to use typical business computer applications by utilizing Microsoft applications.

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, Dillard College is assessing its programs. The assessments will assist us as we improve our curriculum and curriculum delivery.

Course-Specific Learning Goals:

After completing this course, students should be able to:

- Describe how the various business functions use business analytics and visualizations.
- Identify the components of the SOAR analytics model.
- Describe the use of exploratory data visualizations and explanatory data visualizations.
- Identify common tools used to prepare data for analysis and visualization.
- Describe the five types of business analytics: descriptive, diagnostic, predictive, prescriptive, and adaptive/autonomous analytics.
- Describe appropriate visualizations for exploratory business analytics.
- Describe appropriate visualizations for confirmatory business analytics.
- Explain dashboards and their benefits.
- Explain how marketing analytics reports results visually.
- Explain how accounting analytics reports results visually.
- Identify methods of reporting financial analytics results visually.
- Explain how to report the results of operations analytics visually.
- Describe data-drive organizations and the future of business analytics.

Course Policies

Attendance Policy: Regular attendance is expected, and a role will be taken. Upon a student's 5th unauthorized absence, that student will be dropped for nonattendance and receive a grade of “WF” for the course. See the MSU Student Handbook for University Class Attendance Policy.

Missed Examinations and Assignments Policy: Only students with authorized absences (see University Class Attendance Policy) may make up missed examinations and assignments. **Written verification is mandatory for late or missing work.** In all cases, the instructor must be contacted by the day of the scheduled exam, or NO makeup will be allowed. A deduction may be assessed for a late exam at the instructor's discretion.

Grading and Evaluation

Students' performance will be assessed using the following elements.

1. **Exams**: Exams will cover assigned chapters, lab exercises, external online learning units, and chapter projects. Students are responsible for all posted materials, even if it is not directly discussed in class.
2. **Lab Exercises and Project:** The textbook includes lab exercises and a final project to match the course content. Lab exercise has step-by-step instructions, and the final project will need students to work on a real-world dataset.
3. **External Learning:** You need to sign up a FREE account at Microsoft Learn (https://learn.microsoft.com/en-us/training/) and Data Camp (https://www.datacamp.com/) websites. The FREE learning unit links are provided in D2L. These are external learning tutorials to enhance your ability of using the software, so pace yourself and work on the tutorials.
4. **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. Zoom Meeting access: **A clear video of you is required for remote attendance records**.

Grades will be allocated using the following scheme.

Element	Weight	Letter Grade	Numeric Grade
Exams	40%	A	90-100
External Learning	10%	B	80-89
Lab Exercises and Project	40%	C	70-79
Attendance & Participation	10%	D	60-69
Total	100%	F	<= 59

Academic Integrity

Students are referred to as the "Student Honor Creed" of the Midwestern State University Undergraduate Catalog regarding academic honesty. Academic dishonesty (cheating, collusion, and plagiarism) is taken seriously and dealt with according to formal procedures. The minimum penalty is an "F" in this course and a referral to the Dean of Students for disciplinary action, which may result in expulsion from the University. All work

is 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 as defined in the Americans with Disabilities Act and would like to request accommodation. In that case, that student should contact the instructor as soon as possible (i.e., within the first two weeks 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 Undergraduate 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 at Campus Carry Policies. If you have questions or concerns, please contact MSU Police Department.

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 student's transcript or calculated in the cumulative GPA. They simply 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 in 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 related emails regularly!

Tentative Schedule

Week	Date	Day	Chapter	Visualization Topics	Due
1	21-Jan	T		Course Introduction	Software Setup
	23-Jan	R	1	Specify the Question	
2	28-Jan	T		Visualization Lab	Chapter 1 Lab
	30-Jan	R	2	Obtain the Data	
3	4-Feb	T		Visualization Lab	Chapter 2 Lab
	6-Feb	R	3	Analyze the Data	
4	11-Feb	T		Visualization Lab	Chapter 3 Lab
	13-Feb	R	4	Analyze the Data	
5	18-Feb	T		Visualization Lab	Chapter 4 Lab
	20-Feb	R		**Exam 1 Chapters 1 - 4**	**DataCamp 1**
6	25-Feb	T	5	Analyze the Data	
	27-Feb	R		Visualization Lab	Chapter 5 Lab
7	4-Mar	T	6	Report the Results	
	6-Mar	R		Visualization Lab	Chapter 6 Lab
8	11-Mar	T		**No Class, Spring Break**	
	13-Mar	R			
9	18-Mar	T	7	Marketing Analytics	
	20-Mar	R		**No Class, Conference Day**	
10	25-Mar	T		Visualization Lab	Chapter 7 Lab
	27-Mar	R	8	Accounting Analytics	
11	1-Apr	T		Visualization Lab	Chapter 8 Lab
	3-Apr	R		Review and catchup	
12	8-Apr	T		**Exam 2 Chapters 5 - 8**	**DataCamp 2**
	10-Apr	R	9	Financial Analytics	
13	15-Apr	T		Visualization Lab	Chapter 9 Lab
	17-Apr	R		**No Class, Holiday Break**	
14	22-Apr	T	10	Operations Analytics	
	24-Apr	R		Visualization Lab	Chapter 10 Lab
15	29-Apr	T	11	Advanced Analytics	
	1-May	R		Visualization Lab	Chapter 11 Lab
16	6-May	T	12	SOAR capstone	
	8-May	R		SOAR capstone	Chapter 12 Project
Final	13-May	**T**	**8:30-10:00**	**Exam 3 Chapters 9 - 12**	