Course Syllabus: Business Systems Analysis and Design

Dillard College of Business Administration
MIS 4163 Section 270
Spring Semester 2026

Contact Information

Instructor: Jiaxi Luo
Office: Dillard Building 216
Office hours: Mondays & Wednesdays 3:30 – 5:30p Tuesdays 10:00a-11:00a
Office phone: (940) 397-3268
E-mail: jiaxi.luo@msutexas.edu

Course Description

This course develops the core knowledge and practical skills of systems analysis and design for modern organizations. You will learn how to translate ambiguous business needs into clear, testable specifications that guide solution delivery—whether the solution is a custom application or an off-the-shelf system configured to fit. We cover the end-to-end analysis and design process: stakeholder elicitation and scoping, requirements specification, feasibility and risk assessment, conceptual and logical modeling with UML (use case, activity, class, sequence/communication, CRC), architecture and interface design, prototyping, validation and QA, and professional documentation. Throughout, we emphasize iterative thinking, traceability from requirement to design artifact, and the ability to justify design decisions in business terms.

A distinguishing feature of the course is its focus on improving AI-assisted analysis and design. You will learn to use AI responsibly to brainstorm alternatives, draft models and documentation, and critique designs—while verifying outputs, citing sources or tool usage when required, and ensuring that short answers and final specifications remain in your own words. We will practice prompt strategies, error-spotting, and human-in-the-loop evaluation so that AI becomes a force multiplier rather than a crutch. To reinforce concepts, students form small teams to analyze and design an information system of their choice, producing a coherent set of models, a prototype, and evidence of testing. Schedules, milestones, and submission details are provided on D2L.

Course Specific Learning Goals: After completing this course, students should be able to:

- Describe the different phases of the system development life cycle.
- State expected benefits from systems projects.
- Explain three ways in which information systems support business requirements.
- Describe how systems analysts interact with users, management, and other information systems professionals.
- Develop data flow diagrams and decision tables.
- Perform a feasibility study.
- Evaluate systems development alternatives.
- Solve realistic systems analysis problems.
- Determine methods for evaluating the effectiveness and efficiency of a system.
- Work as an effective team member on assigned projects.

Textbook & Instructional Materials

Systems Analysis and Design in an Age of Options, 2nd Edition, ISBN-13: 978-1-958303-19-1, by G. Spurrier and H. Topi.

Books Recommended for Extra Reading:
Generative Analysis: The Power of Generative AI for Object-Oriented Software Engineering with UML, Jim Arlow and Lla Neustadt, Pearson Education Inc, 2024
"Scaling Lean & Agile Development: Thinking and Organizational Tools for Large-Scale Scrum," Craig Larman and Bas Vodde, Pearson Education Inc, 2009.
"Agile Software Development with Scrum," Ken Schwaber and Mike Beedle, Prentice Hall, 2002.
"UML Distilled: A Brief Guide to the Standard Object Modeling Language (3rd Edition)," Martin Fowler, 2008.
UML Documentation & White Papers: https://www.omg.org/uml/
A PC/laptop/tablet with webcam capability (Chromebooks won't work due to insufficient computing power)
Additional readings are posted to D2L.

Student Handbook

Refer to: Student Handbook

Academic Misconduct Policy & Procedures

Academic Dishonesty: Cheating, collusion, and plagiarism (the act of using source material of other persons, either published or unpublished, without following the accepted techniques of crediting, or the submission for credit of work not the individual's to whom credit is given). Additional guidelines on procedures in these matters may be found in the Office of Student Conduct.
Office of Student Conduct

Moffett Library

Moffett Library provides resources and services to support students' studies and assignments, including books, peer-reviewed journals, databases, and multimedia materials accessible both on campus and remotely. The library offers media equipment checkout, reservable study rooms, and research assistance from librarians to help students effectively find, evaluate, and use information. Get started on this Moffett Library webpage to explore these resources and learn how to best utilize the library.

Grading

Points will be allocated using the following scheme. Grades will be based on the recorded points only. Personal reasons (e.g., need a specific grade to graduate, to keep financial aid, to keep straight A record, etc.) are not considered in the grade calculation.

Table 1: Points allocated to each assignment

Assignments	Points
Exam I	100
Exam II	100
Exam III	100
Team Project	300
In-class Exercises	100
Homework	100
Total Points	800

Table 2: Total points for final grade.

Grade	Points
A	720-800
B	640-719
C	560-639
D	480-559
F	<480

Homework

Homework consists of design models (UML models) aligned with each assignment's topic (e.g., use-case, class, sequence/communication diagrams, CRC cards) and counts **100** points toward the course grade. See each assignment page for specific deliverables.

How and when to turn it in:

- **Format**: Submit one file as PDF, PNG(s) (combine multiple images into a single PDF or one Word file), or Word (.docx).
- **Where**: Upload to the D2L Dropbox for the corresponding assignment.
- **Late work**: Accepted up to one week (7 calendar days) after the deadline with a grade penalty (see assignment page for details).
- **Verify the file opens correctly.**

Exams

There will be three online exams in D2L Quizzes. Each exam is timed at 80 minutes and covers assigned chapters, in-class lectures, videos, and all assigned readings (you're responsible for textbook material even if not discussed in class). In the Quiz, you'll complete **T/F**, **Multiple Choice**, and **Short Answer**; you'll also complete one **Design Question** outside the Quiz, which must be submitted to the D2L **Dropbox** as instructed on D2L. AI is permitted only for the **Design Question**, and the Short Answer must be in your own words. The university's academic integrity policies apply.

If the instructor has questions or concerns about the originality of a student's responses, the student may be required to meet with the instructor during office hours to provide a verbal explanation of their answers. The outcome of this meeting may be used to determine or adjust the exam's final score.

Exams total **300** points (**100** each). Exact availability windows and submission steps appear on D2L/Course Schedule. Make-ups follow university policy and require timely communication with documentation.

Projects Required

The team project gives you hands-on experience working with a real or simulated client to rapidly prototype an information system. Teams of 3–5 students will deliver a proposal, requirements, UML design models, a working prototype, QA/testing evidence, documentation, and a brief demo. The project counts 300 points toward the course grade. Milestones, rubrics, and due dates are posted on D2L; submit all deliverables to the D2L Dropbox for each milestone (due by 11:59 PM on the listed date; late work follows the course late policy unless otherwise stated). Limited use of AI is allowed for ideation and drafting with proper disclosure; all analysis, modeling, and writing must reflect your team's own understanding and meet academic integrity expectations. Peer evaluations may adjust individual scores.

Late Work

Late homework, less than one week after the deadline, may be accepted; certain points will be deducted.

Make Up Work/Tests

Students with excused absences may make up missed examinations and in-class activities, but supporting documents are required. Arrangements must be made in advance if possible. In all cases, the instructor must be contacted no later than the day of the scheduled exam, or no make-up will be allowed. At the instructor's discretion, a deduction may be assessed for a late exam.
Excused absences include active military/police/firefighter assignment, jury duty, university-authorized absences (for example, athletic events or study-abroad programs), and medical emergency for yourself or your immediate family member. For more information about university-authorized absences, please refer to the Midwestern State University Undergraduate Catalog:
https://catalog.msutexas.edu

Important Dates

- Last day for term schedule changes: 01/20/2026 – 01/23/2026.
- Deadline to file for graduation: 02/16/2026
- Last Day to drop with a grade of "W:"04/29/2026
- Check the date on the Academic Calendar
- Refer to: Drops, Withdrawals & Void

Desire-to-Learn (D2L)

Extensive use of the MSU D2L program is a part of this course. Each student is expected to be familiar with this program, as it serves as the primary source of communication for assignments, examination materials, and general course information. You can log into D2L through the MSU Homepage. If you experience difficulties, please contact the program's technicians or your instructor.

Attendance

Students are expected to attend all meetings of the classes they are enrolled in. Although students are generally graded on intellectual effort and performance rather than attendance, absences may lower a student's grade if the faculty member deems attendance and participation essential. In classes where attendance is considered part of the grade, the instructor should inform students of the specifics in writing at the beginning of the semester, in a syllabus or a separate attendance policy statement. An instructor with an attendance policy must keep daily records. The instructor must give the student a verbal or written warning before dropping the student from the class. Instructor's records will stand as evidence of absences. A student with excessive absences may be dropped from a course by the instructor. Any individual faculty member or college may establish an attendance policy, provided it is in accordance with the General University Policies. In-class exercises cannot be made up unless the absence is officially excused under university policy.

Online Computer Requirements

Taking an online class requires you to have access to a computer (with Internet access) to complete and upload your assignments. It is your responsibility to have (or have access to) a working computer in this class. ***Assignments and tests are due by the due date, and personal computer technical difficulties will not be considered a reason for the instructor to allow students extra time to submit assignments, tests, or discussion postings.*** Computers are available on campus in various areas of the buildings and in the Academic Success Center. ***Your computer being down is not an excuse for missing a deadline!!** There are many places to access your class! Our online classes can be accessed from any computer with an internet connection. Contact your instructor immediately if you have computer trouble. If you have technical difficulties in the course, there is also a student helpdesk available to you. The college cannot work directly on student computers due to both liability and resource limitations; however, they can help you get connected to our online services. For help, log in to D2L**.**

Instructor Class Policies

- No food or beverage is allowed in the classroom. This is a college policy.
- Please 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).
- Class time is not for surfing the Web, monitoring Facebook, 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 or silence 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 class is the best way to avoid disrupting it.
- Follow MSU COVID-19 behavioral policies and procedures

Change of Schedule

A student dropping a course (but not withdrawing from the University) within the first 12 class days of a regular semester or the first four class days of a summer semester is eligible for a100% refund of applicable tuition and fees. Dates are published in the Schedule of Classes each semester.

Refund and Repayment Policy

A student who withdraws or is administratively withdrawn from Midwestern State University (MSU) may be eligible to receive a refund for all or a portion of the tuition, fees, and room/board charges that were paid to MSU for the semester. HOWEVER, if the student received financial aid (federal/state/institutional grants, loans, and/or scholarships), all or a portion of the refund may be returned to the financial aid programs. As described below, two formulas (federal and state) are used to determine the amount of the refund. (Examples of each refund calculation will be made available upon request.)

Services for Students with Disabilities

In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should apply for such assistance through Disability Support Services, located in the Student Wellness Center, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. For more details, please go to Disability Support Services.

College Policies

Campus Carry Rules/Policies

Refer to: Campus Carry Rules and Policies

Smoking/Tobacco Policy

College policy strictly prohibits the use of tobacco products in any building owned or operated by WATC. Adult students may smoke only in the outside designated-smoking areas at each location.

Alcohol and Drug Policy

To comply with the Drug Free Schools and Communities Act of 1989 and subsequent amendments, students and employees of Midwestern State are informed that strictly enforced policies are in place that prohibit the unlawful possession, use, or distribution of any illicit drugs, including alcohol, on university property or as part of any university-sponsored activity. Students and employees are also subject to all applicable legal sanctions under local, state, and federal law for any offenses involving illicit drugs on University property or at University-sponsored activities.

Active Shooter

The safety and security of our campus is the responsibility of everyone in our community. Each of us has an obligation to be prepared to appropriately respond to threats to our campus, such as an active aggressor. Please review the information from the MSU Police Department on the options and strategies we can all use to stay safe in difficult situations. For more information, visit MSUReady – Active Shooter. Students are encouraged to watch the video entitled "*Run. Hide. Fight.*" which may be electronically accessed via the University police department's webpage: *"Run. Hide. Fight."*

Weather Procedure

In the event of inclement weather, in-person class meetings will be canceled. Alternative assignments, such as online tasks or video-based activities, will be provided to ensure continued learning.

AI-Tool Policy

We encourage students to harness AI tools, like ChatGPT, within the following guidelines:

- **English Writing**: Use AI for grammar and syntax improvement.
- **Drafting & Structuring**: Employ AI to help generate and structure case study drafts.
- **Summarization**: Use AI tools for concise summaries of lengthy case studies.
- **Systems Modeling**: Use AI to inspire and guide the creation of models in systems analysis and design classes, aiding in understanding and interpretation of system behaviors and interactions.

However:

- **Original Thought**: While using AI for assistance, students must develop and present their own unique opinions on cases.
- **Academic Integrity**: Understand and support any content from AI tools. Avoid over-reliance and ensure originality. Misrepresentation will face academic consequences.

Leverage AI benefits responsibly and prioritize genuine understanding and original thinking.

Grade Appeal Process

Update as needed. Students who wish to appeal a grade should consult the Midwestern State University MSU Catalog

*__Notice:__ Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor.

Course Schedule:

Please keep this syllabus as a reference! Students are responsible for all information in the syllabus and for any changes, which will be announced in class.

Week	Date	Chapter	Topic
1	01/19/2026	**Martin Luther King's Day**	No classes
1	01/21/2026	Introduction	Class overview
2	01/26/2026	1	An Overview of Systems Analysis and Design
2	01/28/2026	2	Investigating System Requirements
3	02/02/2026	2	Investigating System Requirements (cont.)
3	02/04/2026	3	Identifying User Stories and Use Cases
4	02/09/2026	3	Identifying User Stories and Use Cases (cont.)
4	02/11/2026	4	Domain Modeling
5	02/16/2026	4	Domain Modeling (cont.)
5	02/18/2026	4	Domain Modeling (cont.)
6	02/23/2026	4	Domain Modeling (cont.)
6	02/25/2026	5	Use Case Modeling
7	03/02/2026	5	Use Case Modeling (cont.)
7	03/04/2026	**Exam1 Chapters 1-5**	
8	03/09/2026	Spring Break	No classes
8	03/11/2026	Spring Break	No classes
9	03/16/2026	6	Foundations for System Design
9	03/18/2026	7	Defining the System Architecture
10	03/23/2026	8	Designing User Interface
10	03/25/2026	8	Designing User Interface (cont.)
11	03/30/2026	9	Designing the Database
11	04/01/2026	9	Designing the Database (cont.)
12	04/06/2026	**Exam2 Chapters 6-9**	
12	04/08/2026	10	Approaches to System Development
13	04/13/2026	11	Project Planning and Project Management
13	04/15/2026	12	Object-Oriented Design: Fundamentals
14	04/20/2026	12	Object-Oriented Design: Fundamentals (cont.)
14	04/22/2026	13	Object-Oriented Design: Use Case Realization
15	04/27/2026	13	Object-Oriented Design: Use Case Realization (cont.)
15	04/29/2026	14	Deploying the New System
16	05/04/2026	**Team Project**	Team Project Presentations
16	05/06/2026	**Team Project**	Team Project Presentations
Final	05/13/2026	**Exam3 chapters 10-14**	