THE UNIVERSITY OF TEXAS AT EL PASO
Department of Accounting and Information Systems

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CIS 4399 – Current Topics in Business Analytics and Information Systems
Artificial Intelligence Business Applications

Course Syllabus, Fall 2025

Class Hours: Tuesdays and Thursdays 9:00 AM - 10:20 AM at CoBA 320
Office Hours: Tuesdays and Thursdays 11:55 AM - 2:05 PM (or by appointment)

Course Description

This course offers a practical, hands-on approach to artificial intelligence (AI) with a focus on designing and implementing AI solutions in business contexts. Students will explore foundational concepts of AI while actively applying tools and techniques such as generative AI, prompt engineering, and AI-driven decision-making. Emphasis is placed on real-world business applications, enabling students to develop solutions that enhance efficiency, creativity, and strategic insight. The course also addresses the ethical, legal, and societal implications of AI in the workplace and beyond.

Learning Objectives

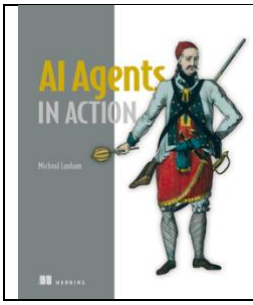
Upon successful completion of this course, students will be able to:

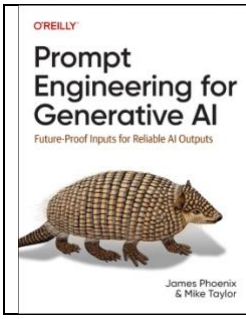
- Understand the fundamental concept and capabilities of AI, including generative AI and its relevance to modern business practices.
- Identify business processes suitable for automation and evaluate the appropriateness of applying AI to enhance their efficiency.
- Build AI agents that integrate with application programming interfaces (APIs) for automating business processes.
- Develop prompt engineering skills to effectively interact with generative AI tools for business tasks such as content creation, analysis, and automation.
- Design and prototype an AI-powered solution to address real-world business challenges with emphasis on improving efficiency, innovation, and decision-making.
- Examine the legal, ethical, and privacy implications of using AI in business.

UTEP EDGE – Experiences

UTEP EDGE – Advantages

Required books

	**AI Agents in Action. (1st ed.). Manning Publications Co. LLC.** Lanham, M. (2025) UTEP's library offers this resource for free: https://utep.primo.exlibrisgroup.com/permalink/01UTEP_INST/uk4am/alma991023303123507051

	**Prompt Engineering for Generative AI. (1st ed.). O'Reilly.** Phoenix, J., & Taylor, M. (2024). UTEP's library offers this resource for free: https://utep.primo.exlibrisgroup.com/permalink/01UTEP_INST/uk4am/alma991023313160607051

Required Software as a Service (SaaS)

	OpenRouter – Large Language Model Gateway A unified API for multiple LLMs. Students must purchase $5 in credits for in-class assignments. https://openrouter.ai/
namecheap	**Name Cheap – Domain name registrar** Students must purchase a domain name. The cost of a .com domain name is approximately $12/year. You can choose any domain name registrar. In class, we will learn how to buy and configure a domain name using Name Cheap. However, you can buy your domain from any vendor. https://www.namecheap.com/domains/registration/gtld/com/
Akamai Cloud	**Linode (Akamai Cloud)– Virtual Private Server (VPS)** Students must purchase a virtual server to deploy AI Agents. The cost for VPS is commonly charged by month. Linode offers free VPS credits for new users. Students can purchase VPS from any vendor. In class we will learn how to create a setup a VPS $5/month with Linode. https://login.linode.com/signup
	OpenAI – ChatGPT Free tier is recommended. Plus tier ($20 a month) is optional. https://openai.com/chatgpt/pricing/
NotebookLM	**NotebookLM – Google** Free to use with Google account. Gemini Base tool to talk with documents. https://notebooklm.google/

	N8N – AI Workflow Automation Platform Self-hosted: https://github.com/n8n-io/n8n Cloud: https://n8n.io/ai/
	Telegram API Cloud based messaging app for mobile and desktop. Documentation: https://core.telegram.org/
Rapid Now part of Nokia	**Rapid API** API Marketplace. Free tier should be enough for the purposes of the class. https://rapidapi.com/

Optional Software and SaaS

	Ollama – Local LLM Framework https://ollama.com/
	Visual Studio Code https://code.visualstudio.com/
Eleven Labs	**Eleven Labs – TTS and AI Voice Generator** Free tier (10k tokens). Paid plans available https://elevenlabs.io/

Teaching methods

1. Attendance and participation
    i. Attendance and participation are crucial in this class. Students must sign an attendance sheet during class. Signing someone else's name will be reported to the OSCCR as suspected collusion. Students who do not engage in the class (e.g., completing other assignments) will not receive credit for class attendance. This component is measured only for non-lab sessions. Lab attendance is integrated into the AI Day assessment; refer to the assessment below for more details.
2. Lab assignments (AI Days)
    i. The course has designed several lab assignments, known as AI Days exercises, to guide students in applying artificial intelligence concepts to business applications. Some of these exercises may require students to use other software packages, online

services, or datasets available on the internet. Students are required to disclose the source of all external material used in each training exercise. Failure to disclose the external use of materials will result in a failure to receive credit and will be reported to the Honor Code System. Only students who attend the class session for the AI day or provide a valid reason for their absence will receive credit for their submission.

3. Final Project
    i. The final project, the culminating assessment for the course, allows students to showcase their understanding and application of concepts covered throughout the semester. It comprises three key components: six project checkpoints, a prototype presentation, and a final submission. The project is designed to foster collaboration, peer learning, and the development of more robust AI-driven business solutions by being done in small groups. The final project's main assessments evaluate students' ability to design, build, and deploy an AI agent that addresses a real-world business challenge, integrating technical skills with creativity and critical thinking.

Evaluation

Attendance – 80 points (5 points per session)
Lab assignments – 40 points for each assignment (8 AI Days assignments)
Final Project Checkpoints – 50 points for each checkpoint (6 Checkpoints)
Final Project –1 Prototype Presentation (100 points), and 1 Final submission (200 points)

A	B	C	D	F
900	800	700	600	<600

Late assignments
Late assignments will be awarded 20% less credit per day late. Make-up assignments, class participation, discussions, checkpoints, and presentations will not be given.
There is a "due date" and an "until" on each assignment; if an assignment is submitted after the "due date," it will be counted late, the "until" is open for late submissions, which will incur a late penalty (20% per day).

Extra credit
The course incorporates extra credit opportunities in assignments, in-class activities, and discussions to promote students' engagement in the class. Additionally, students will have the opportunity to earn extra credit by collaborating to assist their fellow classmates with technical issues.

Email Procedure
Please include "CIS 4399" in the subject line of all emails to the instructor to ensure that they are properly filtered. It would be helpful if the subject line also included a brief statement of need, for example: "CIS 4399 – Request for Appointment." Please read the following link about

emailing a professor for some helpful suggestions (e.g., please start with a greeting including my name and a signature including your name): http://www.wikihow.com/Email-a-Professor.

Accommodations
If you need special accommodations due to a disability, as recognized by the Americans with Disabilities Act, please contact The Center for Accommodations and Support Services (CASS) at 747-5148 or email at cass@utep.edu, or visit their office located at UTEP Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass.

Academic integrity
Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as ones' own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the Office of Student Conduct and Conflict Resolution (OSCCR) for possible disciplinary action. To learn more, please visit HOOP: Student Conduct and Discipline.

Acceptable use of Artificial Intelligence (AI)
The use of AI technologies or automated tools, particularly generative AI such as ChatGPT or DALL-E, **is only allowed with proper attribution given for its use**.

Students must properly cite and give full credit to the program used upon submission of every relevant assignment. For example, programming code generated using AI can only be used if the student understands its functionality. Additionally, all students must disclose the use of AI by including a citation, like the one below:

Chat-GPT(version). Date of query (year/month/day). "Text of your query." Generated using OpenAI Chat-GPT. https://chat.openai.com/

Students are strictly prohibited from copying and pasting blindly from AI. They are also expected to maintain records and disclose complete conversations with AI. Students who plagiarize or cannot provide complete conversations with AI will be reported for plagiarism to the Office of Student Conduct and Conflict Resolution (OSCCR).

Attendance
Attending and actively participating in class sessions is essential for students' learning. This course has designed class activities, discussions, and group activities that foment students' learning and enhance their understanding of the course. Extended absences significantly hinder students' learning experience and can negatively impact their learning environment. Consequently, students who miss class for extended periods will be dropped from the class, as per university policy: "When, in the judgment of the instructor, a student has been absent to such a degree as to impair his or her status relative to credit for the course, the instructor can drop the

student from the class with a grade of W before the course drop deadline and with a grade of F after the course drop deadline", for more information please refer to UTEP's academic catalog on policies and regulations https://catalog.utep.edu/policies-regulations/attendance-grading/.

Tentative Course Outline

Module 1: Foundations of Artificial Intelligence for Business Applications	
Week #1	
08/26 - Session 0	Introduction of CIS 4399
08/28 - Session 1	Thinking Business in AI driven Business Applications
Week #2	
09/02 - Session 2	Best Practices for Ethical Use of Generative Artificial Intelligence
09/04 - Session 3	Building blocks of Business Applications
Week #3	
09/09 - Session 4	Business opportunities vs. Business ideas
09/11 – Session 5	AI Day 1 – Using AI to identify business opportunities
Week #4	
09/16 – Session 6	Infrastructure for Deploying AI Driven Solutions
09/18 – Session 7	AI Day 2 – Domain name and server setup
09/21 – Final Project	Proposal for a Business Opportunity for the Final Project
Module 2: Generative Artificial Intelligence for Business Applications	
Week #5	
09/23 – Session 8	How LLMs Work: Parameters, Prompts, and Context
09/25 – Session 9	AI Day 3 – Personal Portfolio Website
Week #6	
09/29 – Session 10	Five Principles for Prompting Generative Artificial Intelligence
10/02 – Session 11	AI Day 4 - Creative Prompting for Business Content Generation
Week #7	
10/07 – Session 12	Building Business Models for an AI-driven application
10/09 – Session 13	AI Day 5 – Using AI to draft a business model for an AI-driven app
Week #8	
10/14 – Session 14	Introduction to no-code/low-code tools.
10/16 – Session 15	AI Day 6 - Design and implement a no-code/low-code solution
10/19 – Final Project	Industry Analysis for Proposed Business Application
Module 3: Design and Implementation of Artificial Intelligence Business Agents	
Week #9	

10/21 – Session 16	Artificial Intelligence Business Agent Building Blocks
10/23 – Session 17	AI Day 7 - Building your first business agent
Week #10	
10/28 – Session 18	Adding Logic and Flow Control to AI Agents
10/30 – Session 19	AI Day 8 – Adding logic, flow control and human in the loop features
Week #11	
11/04 – Session 20	Multimodal Extensions for AI Agents
11/06 – Session 21	Final Project – Defining the Revenue Model of the AI-driven App
Module 4: AI-Driven Business Application Project	
Week #12	
11/11 – Session 22	Security best practices for an AI-Driven Business Application
11/13 – Session 23	Final Project – Checkpoint A
Week #13	
11/18 – Session 24	Data Governance and Deployment for AI Business Applications
11/20 – Session 25	Final Project – Checkpoint B
Week #14	
11/25 – Session 26	Final Project – Shark tank day
11/27 – No class	Thanksgiving Holiday
Week #15	
12/02 – Session 27	Prototype Presentation – Day 1
12/04 – Session 28	Prototype Presentation – Day 2
12/09 – Final Project	**Final Project Submission**

Important Notes:

1. In addition to the announced office hours, students may stop by my office at any time (or email me) to ask questions.
2. If you have any trouble with the class, please seek help as soon as possible. Do not let the problems build up.
3. This syllabus is tentative.