

Commerce BUSAI 3AI3 Foundations of LLMs and GenAI in Business Fall 2026 Course Outline

DeGroote School of Business McMaster University

COURSE DESCRIPTION

This course introduces students to the core concepts of Large Language Models (LLMs) and Generative AI (GenAI), emphasizing their strategic relevance to business. Students will explore how LLMs process language, generate outputs, and adapt to context—without delving into technical or algorithmic details. Tool-agnostic in approach, the course encourages critical thinking about both proprietary (e.g., ChatGPT, Copilot) and open-weight platforms (e.g., Llama, DeepSeek), fostering a deep understanding of the GenAI ecosystem. By evaluating opportunities, risks, and organizational applications, including private LLM initiatives, students will be prepared to make informed decisions and lead AI-driven transformations in business contexts.

Note: this is a newly designed experiential learning course. Expect changes along the way and experiments... not all of which will work perfectly. We're learning together as GenAI evolves!

INSTRUCTOR AND CONTACT INFORMATION

INSTRUCTOR
Dr. Shane Saunderson
saunds12@mcmaster.ca
Office: DSB409
Office Hours: Post-class & request
Tel: (905) 525-9140 x24417

TEACHING ASSISTANT
TBA
TBA
Office: TBA
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Course website: <https://avenue.mcmaster.ca/>

COURSE ELEMENTS

Credit Value:	3	Leadership:	Yes	IT skills:	Yes	Global view:	Yes
A2L:	Yes	Ethics:	Yes	Numeracy:	No	Written skills:	Yes
Participation:	Yes	Innovation:	Yes	Group work:	Yes	Oral skills:	Yes
Evidence-based:	Yes	Experiential:	Yes	Final Exam:	No	Guest speaker(s):	Yes

CLASS FORMAT

Lectures: Wednesdays, 4:30-6:20pm; (2hr x1/wk); in-person

Tutorials: Fridays, 4:30-5:20pm; (1hr/wk); in-person or online (Zoom)

Wednesday class combines housekeeping, current AI news, lecture, discussion, and applied activities. Friday class is a shorter tutorial focused on hands-on work, assignment preparation, tool experimentation, and feedback. Tutorials will be online or in-person depending on the week and topic.

IMPORTANT LINKS

- [Mosaic](#)
 - [Avenue to Learn](#)
 - [Student Accessibility Services - Accommodations](#)
 - [McMaster University Library](#)
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COURSE LEARNING OUTCOMES

Upon successful completion of this course, students will be able to complete the following key tasks:

1. Explain the basic logic of LLMs and GenAI systems without relying on tool-specific terminology.
 2. Critically evaluate AI-generated outputs for accuracy, reasoning, evidence, omissions, and risk.
 3. Design and document usage strategies and AI-assisted workflows for business tasks.
 4. Identify GenAI privacy, bias, governance, academic integrity, and organizational risks.
 5. Use red-team thinking to probe the limits and vulnerabilities of AI systems.
 6. Map a business process and propose a feasible agentic workflow that combines automation, human judgment, and appropriate controls.
 7. Communicate AI challenges, opportunities, and risks to managerial audiences clearly, ethically, and persuasively.
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REQUIRED MATERIALS AND TEXTS

- No textbook is required. Required readings, videos, cases, links, and tool-specific instructions will be posted on Avenue to Learn each week.
- Students will use generative AI tools throughout the course. McMaster's institutional Co-Pilot system will be encouraged with any sensitive data. Students may also be required to register for free accounts on other platforms (e.g. ChatGPT, Claude), however, no paid subscription is required (but may be optionally used).

COURSE EVALUATION

Component	Weight	Format	Timing	Summary
Assignment #1 AI Forensic Analysis	15%	Individual	Week 5, due Fri., Oct. 9, 11:59pm	Analyze AI-generated output and AI-related incidents against a supplied framework, and record findings in a structured submission.
Midterm Exam	20%	Individual, in-class	Week 7, Wed., Oct. 21, 4:30-6:20pm	<i>Open-book, open-AI exam. Complex, ambiguous, difficult questions where you must show your cyborg/centaur skills.</i>
Assignment #2 Agent Red-Teaming	15%	Individual	Week 9, due Fri., Nov. 6, 11:59pm	Probe a sandboxed AI agent and document red-team strategies plus defensive recommendations.
Project Proposal	5%	Group	Week 10, due Fri., Nov. 13, 11:59pm	High-level outline of final project idea and plans for review & feedback.
Final Project Agentic Workflow Automation	25%	Group	Week 13, due Wed., Dec. 2, 4:29pm	Map a business process and propose, prototype, and govern an agentic AI workflow.
Reflection	20%	Individual	Weekly	Weekly submitted activities that rotate across formats, combined with in-class participation (polls and discussion).

COURSE DELIVERABLES

Note: descriptions below are high-level; full instructions will be provided in advance of all assignments.

Assignment #1: AI Forensic Analysis

Students will work individually with AI-generated material and/or a set of AI-related business incidents, and assess them against a supplied framework of risks, rules, and appropriate responses. Students record their findings and decisions in a fixed format with a short written justification. Generative AI tools are permitted; however, many failure modes will be grey-areas requiring subjectivity and human judgement. Students remain accountable for submitted content and for declaring how AI was used.

Midterm

Open-book, open-AI exam. Complex, ambiguous, difficult questions where you must show your cyborg/centaur skills. More details to come in-class. Expect the unexpected.

Assignment #2: Agent Red-Teaming

In a controlled sandbox, students must recover assigned pieces of information using a number of distinct prompt injection or red-team strategies, explain why each the strategy worked, and recommend how the system should be redesigned to resist similar attacks. Findings are submitted on a structured template. The number of targets and strategies, the sandbox environment, and the exact submission format will be confirmed when the assignment is released.

Project Proposal

Your group must meet and determine the idea for your final project as well as complete a group contract to determine your collaboration parameters. A high-level outline will be provided for the proposal, however, most importantly, this proposal will feature the idea for the workflow you hope to automate and the minimum viable product (MVP) demo you hope to create. Feedback will be given on your proposal that is expected to be integrated into your final project, demo, and presentation.

Final Project: Agentic Workflow Automation

Building on the feedback received on your project proposal, your group will refine your agentic automation idea and propose an agentic AI workflow that improves it. Projects must include a process map, a workflow redesign, human-in-the-loop controls, data and tool assumptions, risk analysis, evaluation metrics, and a short demo showing an MVP prototype how the proposed system (or part of the system) might work. Deliverable will take the form of a Power Point deck (or similar) and a 15m presentation of your project work and demo.

Reflection (Weeks 1-5, 8-12) & Participation

Reflection is earned in two ways: through short weekly activities, submitted through Avenue, of which you may choose **one per week**. Each week may use a different option, giving students multiple ways to show preparation, critical thinking, and practical engagement. Written portions should be **less than 250 words** and including chat logs, images, or other figures, should **not exceed one page**.

- ***Fail of the Week***: include a chatlog of an AI failure you encountered during usage alongside 1 paragraph explaining why you think the system failed and how you might fix it.
- ***Reading-to-Action***: translate one idea from a reading into a concrete business learning or design principle. Write a paragraph about that learning/principal and how you would apply it.
- ***Resource Share***: submit one credible example, tool, case, or resource related to the week's theme with a paragraph explanation of why it matters.
- ***Two Questions***: submit two thoughtful questions about the week's topic, at least one of which must challenge an assumption from the week's learnings.
- ***Prompt Autopsy***: submit one prompt/output pair and explain what worked, what failed, and what you would change.
- ***Risk Radar***: identify one major risk in a current AI use case, tool, or system. Write a paragraph about what it is, why it's risky, and a mitigation strategy.
- ***Surprise me***: think of a clever way to engage with the week's content and send me something you think is interesting and relevant to the week. Feel free to clear your idea with me first.

The second component is **in-class participation**. Polls will be run during lecture using an in-class response tool (e.g. TopHat), and students may periodically be called on to respond to questions about the assigned material for that week. Participation of this kind is assessed on engagement with assigned materials, evident preparation, and engagement, not on being right. Attendance alone does not earn participation credit, and no single poll or question carries meaningful weight on its own.

The two components combine into the single Reflection grade. Students who are unable to attend or participate in class for a documented reason should contact the instructor early in the term so that an alternative can be arranged.

LATE DELIVERABLES

- Weekly reflections must be completed by the due date/time, or will **receive -1% to Reflection**.
 - Any individual assignment where a student obtains an approved MSAF will be given 3 more days. For example, assignments due on a Friday at 11:59pm will be due on Monday at 11:59pm.
 - Note: MSAF submissions will not affect group deliverable deadlines. Group deliverable deadlines will only be adjusted at the instructor's discretion under extreme circumstances.
 - *Assignments 1 & 2 and the Project Proposal will be accepted after the due date, but a late penalty will apply where 20% will be deducted off the assignment for each day late (11:59pm cutoff). It is each student's responsibility to submit the assignment in advance of the deadline.*
 - **Midterm rewrite date:** if you obtain Faculty approved absence for the midterm, there will be a **single** rewrite date on **Fri., Oct. 23 4:30-6:30pm** during the tutorial. If you cannot make either date but have an approved absence, your other marks will be re-weighted without the midterm.
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COMMUNICATION AND FEEDBACK

The instructor's preferred method of communication for this course is **email**. Emails will typically be responded to within 1 working day (i.e. not on weekends). Students who wish to correspond with instructors or TAs directly via email must send messages that originate from their official McMaster University email account. This protects the confidentiality and sensitivity of information as well as confirms the identity of the student.

Students who have concerns about the course content, evaluation methods, or delivery should first reach out to the course instructor. If your concern remains unresolved after speaking with the instructor, you may then reach out to the relevant Area Chair for further consideration.

Students that are uncomfortable in directly approaching an instructor regarding a course concern may send a confidential and anonymous email to the respective Area Chair or Associate Dean:
<http://mbastudent.degroote.mcmaster.ca/contact/anonymous/>

REQUESTING RELIEF FOR MISSED ACADEMIC WORK

In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar [“Requests for Relief for Missed Academic Term Work”](#) and the link below*;

<http://ug.degroote.mcmaster.ca/forms-and-resources/missed-course-work-policy/>

** Non-Commerce students must follow the Missed Course Work protocols outlined by their home faculty and Program Office.*

COURSE MODIFICATION

This is a newly designed, experimental course about a topic (GenAI) that is constantly evolving. This course will modify and evolve along with pedagogical learnings and technology changes. From time to time there may be a need to remove/add topics or to change the schedule or the delivery format. If these are necessary, you will be given as much advance notice as possible.

GENERATIVE AI

This course treats generative AI as both an object of study and a working tool. Students may use AI tools where permitted, but they remain responsible for the accuracy, ethics, and originality of submitted work. Students must not upload confidential, private, proprietary, or personally sensitive information to public AI systems. When required, students must submit chatlogs, prompts, tool outputs, screenshots, or other process evidence.

The use of generative AI must be referenced and cited [per McMaster guidelines](#). Use of generative AI outside assessment guidelines or without citation will constitute academic dishonesty. It is the student's responsibility to be clear on the limitations for use for each assessment and to be clear on the expectations for citation and reference and to do so appropriately. Submitting fabricated process evidence, misrepresenting AI use, or using AI to bypass the purpose of an assignment may be treated as academic misconduct.

ACADEMIC INTEGRITY

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. **It is your responsibility to understand what constitutes academic dishonesty.**

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. For information on the various types of academic dishonesty please refer to the [Academic Integrity Policy](#).

The following illustrates only three forms of academic dishonesty:

- Plagiarism (e.g. submission of work not your own or for which other credit has been given)
- Copying or using unauthorized aids in tests and examinations.
- Improper collaboration in group work.

AUTHENTICITY/PLAGIARISM DETECTION

A web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. Avenue to Learn, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software. **All submitted work is subject to normal verification that standards of academic integrity have been upheld** (e.g., on-line search, other software, etc.). For more details about McMaster's use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

COURSES WITH AN ON-LINE ELEMENT

This course uses on-line elements (e.g. e-mail, Avenue to Learn, LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in a course that uses on-line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

CONDUCT EXPECTATIONS

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the [Code of Student Rights & Responsibilities](#) (the "Code"). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, **whether in person or online**.

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g. use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students' access to these platforms.

ACADEMIC ACCOMMODATION OF STUDENTS WITH DISABILITIES

Students with disabilities who require academic accommodation must contact [Student Accessibility Services](#) (SAS) at 905-525-9140 ext. 28652 or sas@mcmaster.ca to make arrangements with a Program Coordinator. For further information, consult McMaster University's [Academic Accommodation of Students with Disabilities](#) policy.

ACADEMIC ACCOMMODATION FOR RELIGIOUS, INDIGENOUS OR SPIRITUAL OBSERVANCES (RISO)

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the [RISO](#) policy. Students should submit their request to their Faculty Office **normally within 10 working days** of the beginning of term in which they anticipate a need for accommodation or to the Registrar's Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

COPYRIGHT AND RECORDING

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, **including lectures** by University instructors.

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Speak with the instructor if this is a concern for you.

EXTREME CIRCUMSTANCES

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster channels, such as McMaster Daily News, Avenue to Learn and/or McMaster email.

ACKNOWLEDGEMENT OF COURSE POLICIES

Your enrolment in BUSAI 3AI3 is considered to be an implicit acknowledgement of the course policies outlined above, or any other that may be announced in lectures and/or on A2L. **It is your responsibility to read this course outline, to familiarize yourself with the course policies and to act accordingly.**

Lack of awareness of the course policies **cannot be invoked** at any point during this course for failure to meet them. It is your responsibility to ask for clarification on any policies that you do not understand.

COURSE SCHEDULE

Week	Dates	Lecture	Evaluations
1	Sep. 9 / 11	Introduction to AI Concepts & History	Reflection submissions begin (Sundays, 11:59pm)
2	Sep. 16 / 18	Machine Learning, Deep Learning, Neural Networks	
3	Sep. 23 / 25	LLMs, RNNs, Transformers, Emerging Models	Introduce Assignment #1 (tutorial)
4	Oct. 2 (no Wed. class)	Prompting Use Cases & Best Practices	
5	Oct. 7 / 9	Risks and Limitations	Assignment #1 due (Oct. 9, 11:59pm) Midterm Review (tutorial)
6	Oct. 14 / 16	Reading Week	
7	Oct. 21 / 23	Midterm and Debrief	Midterm in-class (Oct. 21, 4:30pm) Introduce Assignment #2 (tutorial) No reflection
8	Oct. 28 / 30	Ethics, Philosophy, and Governance	
9	Nov. 4 / 6	Agentic AI	Assignment #2 due (Nov. 6, 11:59pm)
10	Nov. 11 / 13	Visual Models: GANs, Diffusion, Multimodal AI	Project Proposals due (Nov. 13, 11:59pm)
11	Nov. 18 / 20	Human-AI Interaction	
12	Nov. 25 / 27	Physical AI and Robotics	
13	Dec. 2 / 4	Project Presentations	Project decks due (Dec. 2, 4:29pm) Presentations Dec. 2/4
14	Dec. 9 (no Fri. class)	TBD	