MGMT 675: Generative AI for Finance

FMA 2025

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Overview

- Half-semester MBA course at end of 1st year
- Course comes after:
  - Core finance (semester)
  - Excel-based Applied Finance (half-semester)
- Finance topics mostly repeated from prior courses
- Ideas apply to courses of different lengths, at different points in the curriculum, and for different student groups

CNBC on JPMorgan, 9/30/2025

Derek Waldron, , Chief Analytics Officer:

- (What we're working towards is that) every employee will have their own personalized AI assistant; every process is powered by AI agents, and every client experience has an AI concierge.
- You'll still have people at the top who are managing and have relationships with clients, but many, many of the processes underneath are now being done by AI systems.

Workers would shift from being creators of reports ... or "makers" ... to "checkers" or managers of AI agents doing that work.

Brookings Institute, 2025

- As AI models begin to handle underwriting, compliance, and asset allocation, the traditional architecture of financial work is undergoing a fundamental shift.
- As job descriptions evolve, so does the definition of financial talent. Excel is no longer a differentiator. Python is fast becoming the new Excel.
- But technical skills alone will not cut it. The most in demand profiles today are those that speak both AI and finance.

Course Learning Objectives

1. How to work with AI to do financial analysis
2. How custom chatbots and AI agents work
3. How to work with AI to build apps, custom chatbots, and AI agents for financial analysis

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#1 is essential, #2 is valuable, #3 reinforces 1 and 2 and is fun

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- Build Streamlit apps for the above
- Build AI agents (chatbots + tools) for above using Streamlit and MCP

Assessment

Group projects, building:

- Financial analysis
- App
- Custom chatbot or AI agent

In-class seated exam (?) : Analyze this case (which they haven't seen before) and prepare Excel/Word/. . . reports using AI all you want.

Plan

- Claude $\rightarrow$ Excel
- Example of in-class exercise
- Website: genai4finance.kerryback.com

New Excel Skill for Claude

- In September, Anthropic upgraded Claude so it can generate fully functioning, nicely formatted Excel workbooks.
- Microsoft announced the same capability built into Excel (powered by Claude).
- Claude Prompt: Create an Excel file to illustrate two-stage DCF valuation of a company.
- Result: dcf_analysis_example.xlsx

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- At end, ask: How could we have formulated our initial prompt to make this faster? Save that prompt as a text file.

Julius.ai Demo Prompt 1

Use the latest version of yfinance to get closing prices at a monthly frequency from Yahoo Finance for SPY, IEF, and GLD since 1970. Compute returns as percent changes and filter to the longest history for which returns for all three ETFs are available. Compute the historical mean and covariance matrix. Compute the tangency portfolio assuming the monthly risk-free rate is 0.04/12. Allow short sales.

Julius Demo Prompt 2

Compute the mean-variance frontier of risky assets using the SPY, IEF, and GLD means and covariance matrix. Allow short sales. Create a Word doc containing a plot of (i) the mean-variance frontier, (ii) the risk-free rate, (iii) the tangency portfolio, and (iv) the capital allocation line, assuming again a risk-free rate of 0.04/12. Include in the Word doc the historical means, standard deviations, and correlations of the monthly SPY, IEF, and GLD returns, an explanation of the method used to compute the tangency portfolio, and your interpretation of why the tangency portfolio is what it is. Format the Word doc professionally.

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Content:

- Course description aimed at teachers
- Blog: short posts about teaching various topics on AI and finance
- Course materials: 2025 and 2026 (partial)
- Slides (these and upcoming talk)
- Python materials (for pre-course workshop or individual study)

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