

ECON 436, Emory University – Spring 2026
Syllabus for Economics of Artificial Intelligence
Professor Grennan



EMORY | COLLEGE OF ARTS AND SCIENCES

Administrative Matters

Instructor name and email address. Professor Jillian Grennan, jillian.grennan@emory.edu My preferred way to be contacted is via email. I also check Canvas for messages, especially about assignments, but less frequently than email.

Office hours. Wednesday 1:15-2:45 p.m. and by appointment. Please email me to set up a Zoom chat or in-person meeting. The TA will also hold office hours on Wednesday afternoon.

Class recordings. Posted to Canvas after class, including both Zoom recordings and in-person meetings.

Please do not share class recordings. Advancements in technology have made it possible to create deepfake images and video readily. Therefore, please do not disseminate or share of any classroom recording without my permission as it would be considered “misuse.” It is important to recognize that the lectures presented through video conferencing and other materials posted on Canvas are for the sole purpose of educating the students enrolled in the course. The release of such information (including but not limited to directly sharing, screen capturing, or recording content) is strictly prohibited. Doing so without my permission will be considered an Honor Code violation and may also be a violation of other state and federal laws, such as the Copyright Act. At my discretion, violations of this policy may also have an adverse effect on the student’s grade.

Course Description and Learning Outcomes

This course examines the impact of artificial intelligence (AI) on markets, policy, and innovation. As AI reshapes core economic activities, including how consumers make decisions and how actors (even autonomous ones) allocate scarce resources, these changes present opportunities and pose complex challenges. Students will analyze AI applications across finance, labor markets, and consumer behavior while considering critical questions about market dynamics and regulatory frameworks. We will discuss the broader societal impact of AI through the lens of economic stability, market efficiency, and distributional effects. Using real-world examples, students will evaluate the role of AI in shaping economic outcomes, culminating in presentations on emerging AI opportunities.

After taking this course, you will be able to:

- Describe core AI technologies and their economic implications, including large language models (LLMs), machine learning algorithms, and the computational/data requirements driving their development;

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- Analyze AI as a general-purpose technology (GPT) and compare its economic impact to historical technological transformations in areas like manufacturing, computing, and automation;
- Develop frameworks for analyzing AI investments and business opportunities, incorporating both economic principles and practical implementation considerations;
- Identify and analyze market failures, externalities, and regulatory challenges in AI adoption, particularly in areas of privacy, intellectual property, and algorithmic bias;
- Assess AI's impact on market efficiency, financial stability, and economic inequality through examination of real-world applications;

Course Prerequisites

No prior background in the study of AI is expected. ECON 201 and ECON 215 are official prerequisites, but you can ask me to explain key concepts if you forget or have never learned them.

Textbooks

1. The Data Economy: Tools and Applications by Isaac Baley and Laura Veldkamp
2. Prediction Machines, Updated and Expanded: The Simple Economics of Artificial Intelligence by Ajay Agrawal, Joshua Gans, and Avi Goldfarb

I will also distribute reading materials such as academic articles or news articles on Canvas (see next).

Course Resources

I will manage course announcements and assignments through Canvas. If you are unable to access the Canvas site, please contact me as soon as possible. A copy of the syllabus, detailed reading lists, and copies of class materials can be found there. Class materials, including slides, will be posted to Canvas immediately before each class. Materials in this course are protected by United States copyright laws. I am the copyright holder of the materials I create, including notes, handouts, slides, and videos. You may make copies of course materials for your own use and you may share the materials with other students enrolled in this course. You may not publicly distribute the course materials without my written permission.

Student Technology Help

If technical difficulties prevent you from completing coursework, please alert me immediately. However, understand that I cannot assist you with technical problems. Please use the technical support resources available through Emory. Be sure to document all interactions with tech support (e.g., save emails). For several different ways to get assistance and troubleshoot problems, see <https://classes.emory.edu/gethelp/index.html>

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For Zoom assistance, you can get support from the Zoom Help Center website:

<https://support.zoom.us/hc/en-us>

For computing support, visit the Student Technology Support desk Mon-Fri for walk-up assistance on Level 1 of Woodruff Library. For after-hours support, call 404-727-7777 or visit help.emory.edu.

For presentations, please note that all classrooms are equipped with a podium and an overhead projector.

Grading and Evaluation

I will evaluate your performance in the following areas:

- **Written Assignments (40%)**
 - **Assignment #1 (10%)**
 - **Assignment #2 (10%)**
 - **Assignment #3 (10%)**
 - **Assignment #4 (10%)**
- **Mid-term (20%)**
- **Class Contribution and Attendance (15%)**
- **Final Project and Presentation (15%)**
- **Personal Reflection (10%)**
- **Extra-credit presentations (up to 2.5%):** In association with “Written Assignments.” You need to sign up to present one class before the due date. I will remind you.

Written Assignments. Four written assignments are to be done individually or with a partner as take-home assignments. If you work with a partner, you must still write up your assignment and submit it. Grammar and spelling count, please proofread your papers. To be eligible for full credit, assignments must be submitted by the deadline stated in the syllabus. Absent an extension based on “extraordinary circumstances” (see below for the definition of “extraordinary circumstances”), assignments completed late will receive an automatic 20%-per-day reduction in points, beginning after a 10-minute grace period (e.g. if an assignment is due at 11:59pm on Friday, it will automatically lose 20% at 12:10am on Saturday morning, an additional 20% at 12:10am on Sunday morning, etc.).

Mid-term exam. It will be a mix of true and false, multiple-choice, quantitative and short-answer questions. You will see examples throughout the term via “Concept Checks.” It will be open note. The TA will hold review sessions before the exam.

Class Contribution and Attendance. Class contribution and attendance are comprised of three parts: (i) a student-led discussion of current events, and (ii) attendance, communication, and discussion in class.

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First, given that the economics of AI is constantly evolving, an important component of this course is to get up-to-date on current trends. Each class will begin with a student-led discussion of current events in this space. This involves summarizing recent relevant news articles, highlighting why they are newsworthy, and leading a discussion of what the economic implications are, if any. The final step involves posing questions to the class to help them get more actively involved in current discussions in this space. Each student will be expected to lead the discussion of current events at least once during the semester to get full credit. We will have a sign-up on the first meeting date. If you need ideas, consider reading Matt Levine's opinion column: <https://www.bloomberg.com/opinion/authors/ARbTQIRLRjE/matthew-s-levine>, the Information (<https://www.theinformation.com/>), or MIT Tech Review (<https://www.technologyreview.com/>).

Second, class is always more fun when you ask questions and are engaging with the material. Therefore, attendance and active contribution by answering questions, commenting on applications and examples, and reflecting on potential economic issues is critical for everyone's learning. Much of our class discussion will be driven by the content covered in class that day. As such, absent special circumstances noted below, I expect students to attend each class session and to be prepared to discuss the relevant topics. During discussions, quality is what matters. Effective class participation moves the debate forward by building on previous comments and creating an inclusive environment for you and all of your classmates.

As noted above, all classes will be recorded to accommodate students who may be unable to attend a live session for any number of reasons. If you are unable to attend a class, please notify me of your expected absence in advance of class, if possible. If you are unable to provide advance notice due to an emergency, please contact me as soon as possible with an explanation for the lack of advance notice so that it does not adversely affect your grade.

Missing one lecture would cause the final grade to be reduced by one percentage point. Other actions that would cause your class contribution grade to be lower include using your phone during class, doing other work during class, sleeping during class, and/or discussing your plans for the weekend or something similar when you have been asked to work on an in-class activity. Any class where these activities are observed will result in a one percentage point reduction. Finally, while you may pass if you are called on in class and have nothing to contribute, you have at most two passes without affecting the final grade. Beyond two passes, failing to answer or respond when called upon would cause final grades to be reduced by half a percentage point each time it happens.

Make-up for Missed Classes. Students who miss class can make up for it by sending me an email with a news article relevant to artificial intelligence and a one-paragraph explanation of why the article is relevant to the course. This policy is only available for a maximum of three classes unless a medical note is provided to avoid perverse use of this accommodation.

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Class Notes. Taking class notes can be very useful. I also want to offer some evidence that taking notes by hand may improve your own comprehension. Please see for example, this paper for the actual research (<https://journals.sagepub.com/doi/abs/10.1177/0956797614524581>) and/or this nice op-ed (<https://www.washingtonpost.com/posteverything/wp/2014/12/30/this-year-im-resolving-to-ban-laptops-from-my-classroom/>) summarizing recent research.

Personal Reflection. Each individual will submit a personal reflection. If you make a good effort and follow the directions, you will get full credit for the reflections. You should submit a 2-3 page (double-spaced Times New Roman 12 pt., 1 inch margins) reflection with your thoughts about the economics of digital assets. You may choose your own topic for the reflection. The goal of your personal reflection is to develop your own original thoughts about artificial intelligence. In seeking to generate a new idea, do not be afraid to take a risk. The key to the reflection is the quality of your idea, so please do not feel that you have to fill many pages with writing for the sake of writing. Instead, what I seek is expositional clarity in relation to your idea. Summarize your idea, and then explain how it fits into what you have learned in class, and what your unique angle or economic perspective you are bringing to existing debates.

Extra-credit Presentations. Individuals will be able to present 10-minute presentations with slides for any of the assignments in class on the day that they are due. No more than two students may present in any assignment and only one presentation per student per term.

Your final letter grade depends on the following grading scale.

≥ 93% A
90-92.9% A-
87-89.9% B+
83-86.9% B
80-82.9% B-
77-79.9% C+
73-76.9% C
70-72.9% C-
67-69.9% D+
60-66.9% D
< 60% F

Policies Designed to Ensure Fairness

Honor Code. You are expected to adhere to the provisions of the Honor Code of Emory College. Suspected cases of academic misconduct will be handled according to the Honor Code, which can be found at [Emory College Honor Code](#).

As a reminder of the commitment to academic integrity that everyone in the Emory University community has made, each student will sign the following Honor Pledge on examinations and major academic assessments:

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I pledge to abide by the Emory Honor Code in all academic work and avoid any action that would provide an unfair advantage.

Academic Misconduct. Academic misconduct is a violation of the Honor Code and is generally defined as any action or inaction that is offensive to the integrity and honesty of the members of the academic community. In addition to the violations enumerated in this article, instructors at Emory University have reasonable discretion to establish specific standards and policies as related to their courses and assignments. Such additional standards and policies should be clearly articulated in the syllabus, in the assignment, or otherwise conveyed as an expectation by the instructor. It is the responsibility of each student to understand the policies established in the Honor Code, syllabi, and assignments, and act accordingly.

Academic misconduct includes, but is not limited to, the following actions: cheating, plagiarizing, lying and dishonesty, violating community standards, violating standard in the honor code process. For detailed descriptions, please see: [Emory College Honor Code](#)

Extraordinary circumstances. Timely submission of assignments is an important part of professionalism. As such, I generally expect you to submit each assignment by the due date. I understand, though, that extenuating circumstances may sometimes prevent you from doing so. If you need to submit an assignment late due to an “extraordinary circumstance,” please let me know as soon as possible via email. Extraordinary circumstances are (usually unexpected) that interfere with your ability to complete a timely submission of an exam or a timely submission of an assignment. Such circumstances may include illness, accident, approval through disability services, disruptions due to official school obligations (such as for athletics), religious holidays, or other circumstances beyond your control. Generally, extraordinary circumstances do not include voluntary social activities, voluntary recreational activities, or the need to study for exams or complete assignments in your other classes. When evaluating whether your circumstances are extraordinary, I consider the amount of advanced notice given to me. Also, depending on the nature of the circumstances and the particular deadline, I may require additional details or supporting material.

To obtain an extension or an excused absence based on extraordinary circumstances, please send me an email as soon as you are aware of the need for an extension or excused absence. The message should explain the extraordinary circumstances that prevent you from completing the exam or assignment by the deadline. I will reply to the message confirming whether an extension is granted or the absence is excused. Depending on the circumstances, additional evidence may be required. If you have not received a reply from me confirming the extension within 24 hours (e.g., because I may have missed your message or an error may have disrupted the electronic message), please follow up with me ASAP about the status of your request. If you fail to communicate with me, unexcused late or incomplete assignments will result in reduced points for that assignment.

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Grade Dispute. Please turn in a written petition and if it involves a specific assignment, a copy of the assignment. Any request for a re-grade will result in a re-grade of the entire assignment.

Accommodations for those with a Disability. If you have a documented disability for which accommodations may be required in this class, please contact the Department of Accessibility Services (<https://accessibility.emory.edu/>) as soon as possible to discuss your needs and register for accommodations with the University. If you have already arranged accommodations, please be sure to request your accommodations through the Accommodate portal and discuss them with me during my office hours within the first two weeks of class.

To ensure fairness and consistency, it is required that I receive verification from the Department of Accessibility before providing accommodations. The department will work with students and faculty to arrange proctored exams for students whose accommodations include double time for exams and/or assistive technology. Students with approved accommodations of time-and-a-half should talk with me as soon as possible to schedule proctored examinations or to arrange other accommodations.

Discrimination, Harassment and Sexual Misconduct (Title IX). Emory University is committed to providing all students with a safe learning environment free of all forms of discrimination, sexual harassment, and sexual violence.

Should you need support, Emory has dedicated staff trained to assist you in navigating campus resources, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and filing a formal complaint with the University or with law enforcement. Please see Emory's Equity and Compliance page for more information about reporting options and resources: <https://equityandcompliance.emory.edu/>

Well-being. Many students face personal and environmental challenges that can interfere with their academic success and overall wellbeing. If you are struggling with this class, please visit me during office hours or contact me via email at jillian.grennan@emory.edu. If you are feeling overwhelmed and think you might benefit from additional support, please know that there are people who care and offices to support you at Emory. These services – including confidential resources – are provided by staff who are respectful of students' diverse backgrounds. For an extensive list of well-being resources on campus, please go to:

<http://campuslife.emory.edu/support/index.html>.

And keep in mind that Emory offers free, 24/7 emotional, mental health, and medical support resources via TimelyCare: <https://timelycare.com/emory>

Course Schedule

As noted above, the reading list associated with specific lectures is available on Canvas. Below you will find an outline of the specific topics covered in the course.

Spring Term

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Part 1: AI in Context (8 classes)

We will explore AI's fundamental nature as a transformative technology by examining its current state, historical context, and future potential through three lenses.

- **Current:** Understand emerging AI technologies and trends such as LLMs, agentic AI, and reinforcement learning; identify building blocks of AI, including big data, machine learning algorithms, and compute resources
- **Past:** AI is a general-purpose technology (GPT). What are GPTs, and what can we learn from past GPT breakthroughs? We will draw parallels to lessons learned from the automation of other tasks in recent years (e.g., in manufacturing).
- **Future:** The unique value-add of AI as a GPT (e.g., lower the cost of prediction and exploration), identifying value-creation opportunities with AI, estimating the ROI of AI initiatives by quantifying the costs and value of building essential data infrastructure and support for AI strategies

Part 2: Applications of AI (8 classes)

We will define AI initiatives' costs, risks, and benefits by considering different applications.

- **AI and finance:** how AI is used in trading and asset management; how banks and credit providers use AI, and how AI is used in financial forecasting
- **AI and labor:** replacement vs. augmentation arguments, changes to employee screening processes, and the future of work
- **AI and consumers:** modeling complex consumer decisions and the implications of AI technologies in retail and healthcare contexts.

MIDTERM PRE AND EXAM (2 classes)

Part 3: AI Governance and Regulation (6 classes)

We will examine the frictions and market failures in AI adoption requiring regulatory solutions by considering three applications.

- **Capital market and macroeconomic implications:** implications for prices, volumes, market volatility, crashes, market design, growth, risks, competitive dynamics, entry and exit of market participants
- **Financial stability and economic inequality:** studying the potential risks to financial stability posed by AI use by market participants, model instability and model risks, biases, discrimination, and disparities.
- **Data privacy and intellectual property:** Examining the unique challenges AI poses to data protection and ownership rights, including data collection practices, consent frameworks, fair use considerations, copyright implications of training data, and balancing innovation with privacy rights.

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Part 4: Conclusion and Final Presentations (4 classes)

We will synthesize the course learnings through student-led pitches that demonstrate practical applications of AI while incorporating key considerations from previous sections.

- **AI business proposal:** Students will create an AI business proposal or pitch an existing AI business. They will describe the specific market opportunity AI addresses, including analyzing the technical requirements, data needs, and resource allocation. They will also evaluate the proposed AI solution's economic and social impact and integrate any relevant risk and governance considerations.