

MGB/MGT-490BV: AI Transformation: Building AI-powered business Syllabus — Winter 2026

Instructor Information

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Class Information

Dates: 6-Jan, 13-Jan, 20-Jan, 27-Jan, 3-Feb
Time: 5:30PM – 9:10PM
Classroom: Online (Zoom)

Course Description

This course explores how artificial intelligence (AI)—encompassing machine learning (ML), deep learning, natural language processing (NLP), robotics, and generative AI—is transforming the way businesses and societies operate. Through case studies spanning the future of work, education, healthcare, media, and content creation, we will examine three core questions: 1) The power of transformation: What opportunities emerge as AI adoption scales, and what new business models and industries are being created by this technological revolution? 2) Strategy in the Age of AI: How should firms develop competitive strategies grounded in economic principles to thrive amid rapid technological change? 3) Adapting to the AI Era: How can individuals, organizations, and governments respond to the challenges of AI to harness its full potential for innovation and societal benefit?

Course Objectives

After this course, you should be able to . . .

- Identify the core technologies that underpin artificial intelligence and understand their business applications across industries.
- Analyze how AI is deployed in different sectors, recognize the unique characteristics of these applications, and assess how they create economic and social value.
- Evaluate the transformative implications of AI across key domains—including labor markets, healthcare, media and information, education, and governance.
- Develop a strategic understanding of how AI has reshaped, and will continue to reshape, the future of business and organizational strategy.

- Recognize the ethical, managerial, and policy challenges associated with AI adoption, and formulate strategies to address these challenges responsibly and effectively.

Tentative Schedule

The following is a *tentative* schedule for the course.

<i>Date</i>	<i>Topic</i>	<i>Content</i>
01/06/2026	Introduction & AI in Business	Harnessing AI for Competitive Advantage
01/13/2026	Future of Work	Reimagining Work in the Age of AI
01/20/2026	Healthcare & Life Sciences	From Lab to Clinic: How AI Is Revolutionizing Medicine
01/27/2026	Media & Information	How AI Shapes What We See and Believe
02/03/2026	Education & Governance	AI for Learning and Human Flourishing

Course Content

01/06/2026: Introduction & AI in Business

Harnessing AI for Competitive Advantage

In this session, we will explore the question “What is Artificial Intelligence (AI)?” and examine how modern AI technologies—ranging from Machine Learning (ML), Deep Learning (DL), and Natural Language Processing (NLP) to Robotics and Generative AI—are reshaping industries. As a general-purpose technology driving the Fourth Industrial Revolution, AI has transformed how businesses create and capture value. Through case studies of AI-powered platforms such as Amazon, Uber, and Google, as well as applications in healthcare, education, and governance, we will analyze how organizations harness AI capabilities to innovate, compete, and advance both business and humanity. The goal is to understand the strategic principles behind successful AI transformation and the pathways through which AI generates competitive advantages and business values.

Reading

- Bapna, Ravi, and Anindya Ghose. 2024. “Everyone Is Welcome in the House of AI.” In *Thrive: Maximizing Well-Being in the Age of AI*, 1-22. Cambridge, MA: The MIT Press. <https://direct.mit.edu/books/book/5852/chapter-abstract/5084773/Everyone-is-Welcome-in-the-House-of-AI?redirectedFrom=PDF>
- Bapna, Ravi, and Anindya Ghose. 2024. “Conclusion: Making AI Work for You.” In *Thrive: Maximizing Well-Being in the Age of AI*, 155-160. Cambridge, MA: MIT Press. <https://direct.mit.edu/books/book/5852/chapter-abstract/5084781/Conclusion-Making-AI-Work-for-You?redirectedFrom=PDF>

- Lal, Rajiv, Donald Ngwe, and Christopher M. Fairchild. 2020. Amazon Go: Venturing into Just Walk Out Technology (HBS 9-620-017). Boston: Harvard Business School Publishing. <https://hbsp.harvard.edu/product/W17398-PDF-ENG>
- Iansiti, Marco, and Karim R. Lakhani. 2020. “The Age of AI.” In *Competing in the Age of AI: Strategy and Leadership When Algorithms and Networks Run the World*, 1-24. Boston: Harvard Business Review Press. <https://hbsp.harvard.edu/product/1049BC-PDF-ENG>

01/13/2026: Future of Work

Reimagining Work in the Age of AI

In this session, we will examine how AI-driven automation is transforming the nature of work and labor markets. We will explore how traditional components of AI—such as machine learning, deep learning, and robotics—have redefined the demand for human skills, shifting the balance between human and machine capabilities. Are these technologies primarily replacing human labor, or are they augmenting it by enabling people to focus on more creative and value-generating tasks? Building on this foundation, we will also discuss the rise of Generative AI and its implications for the future of work—highlighting both the new opportunities it creates and the organizational and societal challenges it brings.

Reading

- Erik Brynjolfsson; *The Turing Trap: The Promise & Peril of Human-Like Artificial Intelligence*. Daedalus 2022; 151 (2): 272–287. <https://direct.mit.edu/daed/article/151/2/272/110622/The-Turing-Trap-The-Promise-amp-Peril-of-Human>
- Brynjolfsson, Erik, Tom Mitchell, and Daniel Rock. 2018. "What Can Machines Learn, and What Does It Mean for Occupations and the Economy?" *AEA Papers and Proceedings* 108: 43–47. <https://www.aeaweb.org/articles?id=10.1257/pandp.20181019>
- Iansiti, Marco, and Karim R. Lakhani. 2020. “Rearchitecting the Firm.” In *Competing in the Age of AI: Strategy and Leadership When Algorithms and Networks Run the World*. Boston: Harvard Business Review Press. <https://hbsp.harvard.edu/product/1052BC-PDF-ENG>

Required Reading

- Stanton, Christopher, Matt Higgins, Shira Aronson, and Meg Shriber. “Generative AI and the Future of Work.” Harvard Business School Case 824-130, December 2023. (Revised November 2024.) <https://store.hbr.org/product/generative-ai-and-the-future-of-work/824130?sku=824130-PDF-ENG>

01/20/2026: Healthcare & Life Sciences

From Lab to Clinic: How AI Is Revolutionizing Medicine

In this session, we will explore how artificial intelligence is transforming the healthcare and life sciences industries. We will discuss how core AI technologies are reshaping work in scientific research, clinical practice, and hospital operations. From accelerating protein structure discovery and drug

development to optimizing staffing in emergency care units and improving diagnostic accuracy, AI is redefining how healthcare is delivered and managed. We will also examine how the recent wave of generative AI is influencing medical research, clinical decision support, and patient engagement, and consider what these advancements mean for the future of medicine, healthcare systems, and human well-being.

Reading

- Lederman, O., Llana, A., Murray, J., Stanton, Lederman, O., Llana, A., Murray, J. et al. Promises and perils of generative artificial intelligence: a narrative review informing its ethical and practical applications in clinical exercise physiology. *BMC Sports Sci Med Rehabil* 17, 131 (2025). <https://doi.org/10.1186/s13102-025-01182-7>
- Davenport, Thomas H., and Steven M. Miller. 2022. “Medical Diagnosis and Treatment Record Coding with AI.” In *Working with AI: Real Stories of Human–Machine Collaboration*, Cambridge, MA: The MIT Press. <https://doi.org/10.7551/mitpress/14453.003.0013>.
- Silcox, Christina, Eyal Zimlichmann, Katie Huber, Neil Rowen, Robert Saunders, Mark McClellan, Charles N. Kahn III, Claudia A. Salzberg, and David W. Bates. 2024. “The Potential for Artificial Intelligence to Transform Healthcare: Perspectives from International Health Leaders.” *npj Digital Medicine* 7: 88. <https://doi.org/10.1038/s41746-024-01097-6>.

Required Reading

- Bussgang, Jeffrey J., Sarah Mehta, and Maxim Pike Harrell. “Summer Health: Raising an AI-First Company?” Harvard Business School Case 825-083, January 2025. <https://www.hbs.edu/faculty/Pages/item.aspx?num=66903>

01/27/2026: Media & Information

How AI Shapes What We See and Believe

In this session, we will explore how digital technologies and artificial intelligence have transformed the news media landscape and reshaped patterns of information consumption over the past decade. The rise of social media platforms and the decline of traditional news outlets have fundamentally altered how individuals access, share, and trust information. AI now plays a central role in curating personalized content feeds, amplifying certain narratives, and inadvertently contributing to phenomena such as echo chambers, misinformation, and political polarization.

As we enter the era of generative AI, these dynamics are evolving even further—raising new questions about authenticity, trust, and the future of journalism. This session examines the key features of information and knowledge pursuit in the age of AI, focusing on both the opportunities it presents for democratizing knowledge and the challenges it poses for maintaining truth, transparency, and societal cohesion.

Reading

- Diakopoulos, Nicholas. 2019. "Hybridization: Combining Algorithms, Automation, and People in Newswork." In *Automating the News: How Algorithms Are Rewriting the Media*. Cambridge, MA: Harvard University Press. <https://cs.unibg.it/verdicch/Diakopoulos%20-%20Automating%20the%20News%20-%20chapter%201.pdf>
- Vosoughi, Soroush, Deb Roy, and Sinan Aral. 2018. "The Spread of True and False News Online." *Science* 359 (6380): 1146–1151. <https://doi.org/10.1126/science.aap9559>
- Hao, Karen, "How Facebook got addicted to spreading misinformation?" *MIT Technology Review* March 11, 2021. <https://www.technologyreview.com/2021/03/11/1020600/facebook-responsible-ai-misinformation/>

Required Reading

- Elkins, Caroline M., Debbie Millman, Peter Litzow, and Rory Finnegan. "The Atlantic and OpenAI." *Harvard Business School Case* 726-017, September 2025. <https://www.hbs.edu/faculty/Pages/item.aspx?num=67857>

02/03/2026: Education & Governance

AI for Learning and Human Flourishing

In this session, we will explore how artificial intelligence is transforming both the education sector and the broader landscape of governance. Traditional educational models are increasingly costly and often fail to provide personalized, scalable learning experiences. AI introduces powerful new tools—intelligent tutoring systems, adaptive learning platforms, and predictive analytics—that can tailor instruction to individual needs and enhance learning outcomes across diverse populations.

Beyond education, we will examine the rise of AI governance as societies grapple with the ethical, regulatory, and societal implications of these technologies. What frameworks are needed to ensure responsible innovation, protect human rights, and foster human flourishing in the age of AI? By discussing these intertwined developments, we will consider how AI is reshaping not only what and how we learn, but also how we govern, regulate, and sustain technological progress for the public good.

Reading

- The Digitally Powered Ivory Tower: How Digitization Is Creating Abundance in Access and Instruction." 2023. In *The Abundant University: Remaking Higher Education for a Digital World*, Michael D. Smith. Cambridge, MA: The MIT Press. <https://doi.org/10.7551/mitpress/14247.003.0012>.
- H. Bastani, O. Bastani, A. Sungu, H. Ge, Ö. Kabakçı, & R. Mariman, Generative AI without guardrails can harm learning: Evidence from high school mathematics, *Proc. Natl. Acad. Sci. U.S.A.* 122 (26) e2422633122, <https://www.pnas.org/doi/10.1073/pnas.2422633122>.
- U.S. White House. 2023. *Blueprint for an AI Bill of Rights*. <https://bidenwhitehouse.archives.gov/ostp/ai-bill-of-rights/>
- Rayport, Jeffrey F., Nicole Tempest Keller, and Nicole Luo. "Duolingo: On a 'Streak'." *Harvard Business School Case* 825-097, January 2025. (Revised April 2025.) <https://www.hbs.edu/faculty/Pages/item.aspx?num=66865>

Project

Final Group Project: AI-Powered Business Solution

Each group will design, analyze, and present an end-to-end AI-driven solution addressing a real-world business problem. The goal is to integrate strategic thinking with technical and ethical understanding of AI applications in business contexts.

Project Guidelines:

- **Business Problem:** Identify a specific business challenge or opportunity. Explain its relevance and why solving it matters for the organization, industry, or society.
- **AI/ML Application:**
 - Justify why artificial intelligence or machine learning is an appropriate approach for addressing this problem.
 - Describe the proposed AI/ML methods or techniques (e.g., predictive modeling, natural language processing, recommender systems).
 - Specify the type of data required, potential data sources, and any anticipated challenges in data acquisition or preparation.
- **Solution Evaluation:** Outline how you will assess the effectiveness of your proposed solution. Define clear success metrics and performance indicators.
- **Ethical and Strategic Considerations:** Discuss potential risks, limitations, and unintended consequences of your solution. Reflect on ethical issues such as data privacy, algorithmic bias, fairness, and transparency.

Deliverables:

A final presentation that demonstrates your team's ability to integrate AI concepts, business strategy, and responsible innovation.

Grading

The course grade is determined by the following components:

Class Participation	Discussion in class; Pre-class readings	30%
Case Studies	Case Studies in class	40%
Project	Using AI/ML to solve a business problem	30%