

Title (Units): **GTSU2055 To Fear or Not To Fear: The Coming of AI and What It Means for Our Communities (3,3,0)**

Course Aims: The AI revolution has often been compared to the industrial revolution. The industrial revolution dramatically reduced the relevancy of land in the economy, shifted the political power from land-owning aristocrats to industrialists, drove hordes of peasants to the cities, and set the stage for subsequent social and political changes around the world. Will AI similarly dramatically reduce the relevancy of humans in the economy, concentrate power in the hands of those who have access to AI, disrupt the fabric of our political institutions, and threaten the sustainability of our communities?

This course will discuss these questions in the context of sustainable communities (cf. the 17 UN goals). Specifically, we will discuss:

1. How the AI revolution helps reduce the environmental costs of our economic activities by reducing wastes and inefficiency;
2. How the AI revolution threatens the basic human rights of all community members, such as civil liberty, privacy, the right to work, and the right to express our identities;
3. How we should re-design our economic and political institutions to harness these threats to our communities.

To discuss these questions, we need interdisciplinary knowledge. This course is co-offered by the Department of Computer Science and the Department of Economics. An instructor from computer science will help students to have an informed evaluation of what AI can and cannot do, while an instructor from economics will help students to parse through the likely political, social, and economic impacts on our communities.

To facilitate students' learning, the course would utilize interactive learning tools with materials drawn from historical events, academic research, online and offline materials, and daily observations. It would also encourage interaction among students through in-class debates, group projects, and class presentations.

Prerequisite: Nil

Course Intended Learning Outcomes (CILOs):

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

No.	Course Intended Learning Outcomes (CILOs)
	Knowledge
1	Describe the differences between AI and automation and explain concepts and issues related to AI and sustainable.
2	Integrate knowledge in various disciplines (such as political science, economics, computer science, law, and sociology) to identify areas where the arrival of AI would critically affect sustainable community.
	Professional Skill
3	Evaluate the impacts of AI and prepare for the future at the individual level.
4	Apply knowledge from various disciplines to design potential solutions and policy instruments for sustainable community.

Calendar Description: The AI revolution has often been compared to the industrial revolution. The industrial revolution dramatically reduced the relevancy of land in the economy, shifted the political power from land-owning aristocrats to industrialists, drove hordes of peasants to the cities, and set the stage for subsequent social and political changes around the world. Will AI similarly dramatically reduce the relevancy of humans in the economy, concentrate power in the hands of those who have access to AI, disrupt the fabric of our political institutions, and threaten the sustainability of our communities?

Teaching and Learning Activities (TLAs):

CILOs	Type of TLA
1-4	Lectures Interactive lectures will facilitate students' understanding of various issues related to AI.
1-4	Reflection on media Students will watch videos on how AI affects our communities. Students will evaluate the viewpoints expressed in these videos.
2-4	In-class debate Students will debate on a relevant debate topic after each lecture.
1-4	Group Projects Students will choose from various fantasies of how AI changes the future (such as AI enslaving human beings, AI becoming the president, etc.). They will evaluate the possibility and sustainability of such a story and how we could prepare ourselves for that.

Assessment:

No.	Assessment Methods	Weighting	CILOs to be addressed	Description of Assessment Tasks
1	Class Participation	20%	2-4	Students are encouraged to prepare before classes by reading the relevant readings. They will be assessed by how well they manage to raise thought-provoking and meaningful questions during lectures and in-class debates. Students are also required to hand in a summary paragraph after their classmates' in-class debates.
2	Class presentation of group project	15%	1-4	Students will give a class presentation on their group projects. They will be assessed by how well they articulate their ideas and answer questions.
3	Two in-class debates	45%	2-4	Students will form groups, and each group will be assigned two of the weekly debate topics. They will be assessed by how well they work as a team and debate in a civil and reasoned manner.
4	Group Project	20%	1-4	Students will choose an AI-related fantasy mentioned in fictions, movies, etc., and give a critical evaluation of whether the described scenarios are socially, economically, politically, and technologically plausibility. They will be assessed by how well they integrate interdisciplinary knowledge into their analysis, and how well they can suggest ways our communities can prepare for that possible future.

Assessment Rubrics:

Excellent (A)	<ul style="list-style-type: none"> • Achieve the first two CILOs, demonstrating a thorough understanding of the concepts of information management technology in business environment. • Demonstrate excellent ability to use IT tools to acquire, communicate and present social and business information via different digital media formats. • Able to well apply Design Thinking to understand and analyse social challenges, and design user-centric solutions using information technology. • Able to well apply information technologies as well as business knowledge to solve social challenges innovatively.
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Good (B)	<ul style="list-style-type: none"> • Achieve the first two CILOs, demonstrating a good understanding of the concepts of information management technology in business environment. • Demonstrate good ability to use IT tools to acquire, communicate and present social and business information via different digital media formats. • Able to apply Design Thinking to understand and analyse social challenges, and design user-centric solutions using information technology. • Able to apply information technologies as well as business knowledge to solve social challenges innovatively.
Satisfactory (C)	<ul style="list-style-type: none"> • Achieve the first two CILOs, demonstrating a basic level of understanding of the concepts of information management technology in business environment. • Able to use a few IT tools to acquire, communicate and present social and business information via different digital media formats. • Able to apply certain Design Thinking to understand and analyse social challenges, and design user-centric solutions using information technology. • Able to apply a few information technologies as well as business knowledge to solve social challenges innovatively.
Marginal Pass (D)	<ul style="list-style-type: none"> • Achieve the first two CILOs, demonstrating a minimal level of understanding of the concepts of information management technology in business environment. • Able to use basic IT tools to acquire, communicate and present social and business information via different digital media formats. • Able to apply basic Design Thinking to understand and analyse social challenges, and design user-centric solutions using information technology. • Able to apply basic information technologies as well as business knowledge to solve social challenges innovatively.
Fail (F)	<ul style="list-style-type: none"> • Do not achieve the first two CILOs, and have little understanding of the concepts of information management technology in business environment. • Unable to use basic IT tools to acquire, communicate and present social and business information via different digital media formats. • Unable to apply basic Design Thinking to understand and analyse social challenges, and design user-centric solutions using information technology. • Unable to apply basic information technologies as well as business knowledge to solve social challenges innovatively.

Course Content and CILOs Mapping:

Content		CILO No.
I	What is AI and sustainable community?	1-4
II	AI and Free Will	1-4
III	AI and the Sustainability of Democracy	1-4
IV	AI and the Sustainability of Civil Liberties	1-4
V	AI and Privacy	1-4
VI	Privacy Protection Around the World	1-4

VII	AI and the Sustainability of Our Job Opportunities	1-4
VIII	AI and Inequality	1-4
IX	AI and Identity	1-4
X	AI and Culture	1-4
XI	Responsible development of AI	1-4
XII	Class Presentations of Group Projects	2-4

References:

- Albrecht, J. P. (2016). "How the GDPR will change the world." *European Data Protection Law Review*, 2, 287.
- Buolamwini, J. (2019). "Artificial intelligence has a racial and gender bias problem." *Time*.
- Fleder, D., & Hosanagar, K. (2009). Blockbuster culture's next rise or fall: The impact of recommender systems on sales diversity. *Management Science*, 55(5), 697-712.
- Harari, Y. N. (2018). *21 Lessons for the 21st Century*. Random House.
- Kizza, J.M. (2017). *Ethical and Social Issues in the Information Age* (6th Edition). Springer.
- Korinek, A., & Stiglitz, J. E. (2017). Artificial intelligence and its implications for income distribution and unemployment (No. w24174). *National Bureau of Economic Research*.
- Olson, P. (2018). "AI Won't Kill The Job Market But Keep It Steady, PwC Report Says." *Forbes*.
- Sivek, S. C. (2018). "Media that know how you feel: the ethics of emotion analytics in consumer media." in B. Banacker and D. Heider (eds.) *Ethics for a Digital Age*, Vol. II. Peter Lang Inc.
- Song, M., Cen, L., Zheng, Z., Fisher, R., Liang, X., Wang, Y., & Huisingh, D. (2017). "How would big data support societal development and environmental sustainability? Insights and practices" *Journal of Cleaner Production*, 142, 489-500.

Course Content:

Topic

- I. What is AI and sustainable community?
- II. AI and Free Will
- III. AI and the Sustainability of Democracy
- IV. AI and the Sustainability of Civil Liberties
- V. AI and Privacy
- VI. Privacy Protection Around the World
- VII. AI and the Sustainability of Our Job Opportunities
- VIII. AI and Inequality
- IX. AI and Identity
- X. AI and Culture

- XI. Responsible development of AI
- XII. Class Presentations of Group Projects