Title (Units): **GFAI1005 AI Literacies for Social Good (2,1,1)**

Course Aims:

The course aims to introduce students to the foundational knowledge and skills necessary for developing basic AI literacies, which include:

(1) Technological knowledge through an introduction to key concepts and principles underlying Artificial Intelligence (AI) and its emerging developments;
(2) Practical applications by exploring potential uses of AI in various domains and learning how to effectively integrate AI tools STEM into students' personal, academic, and professional lives;
(3) Ethical awareness by discussing the risks, debates, and impacts of AI, fostering responsible usage of AI technologies;
(4) Understanding human uniqueness and agency by examining AI's broader effects on human well-being, creativity, critical thinking, and the sense of agency when collaborating with AI for social good.

By addressing these aspects, the course ensures students acquire essential transdisciplinary competence to utilize AI technologies productively and ethically in their studies, future careers, and daily life.

The first part of the course focuses on (1) and (2): introducing students to technological knowledge and practical applications of AI tools. Interactive lectures and tutorials will help students grasp fundamental AI concepts and complete basic lab exercises using AI tools. A flipped classroom approach will be adopted, providing students with video lectures and online materials to accommodate diverse learning paces and encourage active participation.

The second part of the course addresses (3) and (4): fostering ethical awareness and understanding human uniqueness. Through lectures, debates, and scenario analyses, students will critically explore AI's productive uses while reflecting on its impacts on human futures and responsible collaboration with AI for social good

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	Comprehend fundamental AI concepts and applications.
2	Explore basic AI tools and their potential uses in everyday life.
3	Recognize basic risks and ethical considerations in using AI responsibly.
4	Understand the impact of AI on human actions and behaviors.

Calendar Description: This course introduces students to the foundational concepts and principles of Artificial Intelligence (AI), along with emerging developments in the field.

Students will gain hands-on experience with basic AI tools, explore practical applications across personal, academic, and professional contexts, and develop an understanding of the ethical, social, and human impacts of AI. Through interactive lectures, tutorials, and scenario analyses, students will build essential AI literacy and transdisciplinary competence for responsible and productive use of AI technologies in everyday life and future careers.

Teaching and Learning Activities (TLAs):

CILOs	Type of TLA
1-4	Lectures / Flipped Content Students will participate in interactive lectures designed to introduce and deepen their understanding of AI concepts and principles. The flipped content will allow students to prepare prior to class, ensuring they can actively engage in discussions about AI's innovative and responsible use in society. Lectures will facilitate a comprehensive understanding aligned with CILOs 1, 2, 3, and 4.
1-2	Hands-on-lab Sessions In these sessions, students will gain practical experience with AI tools, learning how to apply them effectively in personal, academic, and professional settings. These labs will focus on developing technical skills and understanding AI's capabilities and limitations, directly supporting CILOs 1 and 2.
3-4	In-class Debates Students will engage in structured debates and discussions to critically analyze AI's broader impact on human behavior and societal norms. These debates will encourage students to articulate their perspectives, challenge assumptions, and consider diverse viewpoints. Through these activities, students will develop critical thinking and ethical reasoning skills, closely aligning CILOs 3 and 4.
3-4	Scenario/Story Explorations Working in collaborative groups, students will explore various scenarios and narratives that highlight ethical and critical issues related to AI use in different life domains. These explorations will involve research, role-playing, and creative storytelling to investigate AI's implications on privacy, bias, and human agency. By addressing complex dilemmas, students will enhance their ability to evaluate AI's societal effects, supporting CILOs 3 and 4.

Assessment:

No.	Assessment Methods	Weighting	CILOs to be addressed	Description of Assessment Tasks
1	On-line Lecture Exercises	10%	1-4	Lecture exercises will evaluate students' understanding on the lecture contents to guide further in-class discussion.
2	Quiz	20%	1-4	A quiz will evaluate the students' understanding of AI concepts and principles, and its innovative and responsible use in society.
3	Lab Exercises	20%	1-2	Lab exercises will evaluate how well the students can make effective use of AI tools and understand their limitations.
4	In-Class Debates	20%	3-4	In-class debates will evaluate how well the students can analyze the wider effects of AI on human actions, thoughts, and behaviors.
5	Scenario/ Story Presentation	30%	3-4	Students will create and present scenarios/narratives/imaginaries to illustrate how to identify and evaluate potential impacts of AI to future life and social good.

Assessment Rubrics:

Excellent (A)	• Demonstrates a deep and comprehensive understanding of foundational AI concepts, principles, and emerging developments, and skillfully explains and applies them to varied real-world scenarios.

	• Exhibits advanced proficiency in integrating and utilizing AI tools across personal, academic, and professional contexts, leading to innovative and significant outcomes. • Provides insightful, well-evidenced, and comprehensive evaluations of AI risks, ethical debates, and societal impacts, demonstrating highly responsible and reflective AI usage. • Conducts thorough, nuanced, and original analyses of AI's broader effects on human well-being, creativity, critical thinking, and agency, demonstrating a sophisticated understanding of human-AI collaboration for social good.
Good (B)	• Shows a solid grasp of key AI concepts, principles, and developments, and applies them accurately in a range of contexts. • Demonstrates proficient and effective use of AI tools in personal, academic, and professional situations, resulting in positive and relevant outcomes. • Demonstrates a good understanding of AI-related risks, ethical issues, and debates, and evaluates them thoughtfully, showing responsible use. • Provides detailed and well-supported analyses of the impacts of AI on human well-being, creativity, and agency, showcasing a solid understanding of responsible collaboration with AI.
Satisfactory (C)	• Demonstrates a basic understanding of essential AI concepts and principles but may lack depth or clarity in application. • Utilizes AI tools adequately in various contexts, though application may lack consistency, depth, or creativity. • Offers basic evaluations of AI risks and ethical debates, but may lack depth, critical insight, or reflection. • Provides basic analyses of AI's impacts on human aspects, but may lack depth, complexity, or critical engagement.
Marginal Pass (D)	• Shows some understanding of AI concepts and principles but struggles with accurate explanation and effective application. • Demonstrates limited ability to use AI tools, often with inconsistent or ineffective results. • Shows limited ability to identify or critically evaluate AI risks, debates, and ethical issues. • Shows limited ability to analyze or reflect on the effects of AI on human well-being, creativity, or agency.
Fail (F)	• Fails to demonstrate a basic understanding of key AI concepts, principles, or developments. • Fails to demonstrate basic competence in utilizing AI tools in any context. • Fails to demonstrate any meaningful evaluation or awareness of AI risks, ethical debates, or issues. • Fails to provide any meaningful analysis or reflection on the wider effects of AI on human aspects or on responsible use.

Course Content and CILOs Mapping:

Content		**CILO No.**
I	Introduction to AI - Overview, History, and Tasks	1,4
II	Machine Learning and Data Privacy	1-4
III	Natural Language Processing and Human Uniqueness	1-4
IV	Generative AI, Misinformation and Intellectual Property	1-4
V	AI Agent, Safety and Trust	1-4
VI	AI Ethical and Critical Awareness	1-4
VII	In-Class Debate	3,4

References:

1. Chiu, T. (2023). Future research recommendations for transforming higher education with generative AI. Computers and Education: Artificial Intelligence https://doi.org/10.1016/j.caeai.2023.100197
2. Moorhouse, B.L., Yeo, M., & Wan, Y. (2023). Generative AI tools and Assessment: Guidelines of the

World's top-ranking universities, Computers & Education Open. https://doi.org/10.1016/j.caeo.2023.100151
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4. Oniani, D., Hilsman, J., Peng, Y., Poropatich, R. K., Pamplin, J. C., Legault, G. L., & Wang, Y. (2023). Adopting and expanding ethical principles for generative artificial intelligence from military to healthcare. NPJ Digital Medicine, 6(1), 225.
5. Fui-Hoon Nah, F., Zheng, R., Cai, J, Siau, K. & Chen., L. (2023). Generative AI and ChatGPT: Applications, challenges, and AI-human collaboration, Journal of Information Technology Case and Application Research, 25:3, 277-304, DOI: 10.1080/15228053.2023.2233814
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7. Webster, A., & Wyatt, S. (2020). Health, technology and society. Springer Singapore.
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9. Markauskaite, L., Marrone, R., Poquet, O., Knight, S., Martinez-Maldonado, R., Howard, S., ... & Siemens, G. (2022). Rethinking the entwinement between artificial intelligence and human learning: What capabilities do learners need for a world with AI? Computers and Education: Artificial Intelligence, 3, 100056.
10. Checketts, L. (2024). Poor Technology: Artificial Intelligence and the Experience of Poverty. Fortress Press.

Course Content:

Topic

I. Introduction to AI - Overview, History, and Tasks
This lecture provides an overview of AI, tracing its historical development and examining the key tasks AI can perform. It will also explain the importance of gaining AI literacies and its social impact.

II. Machine Learning and Data Privacy
This lecture introduces machine learning concepts and applications, and discusses the potential concern on data privacy. Students will learn about the importance of data in machine learning and engage with the machine learning tools to explore practical applications while considering privacy implications.

III. Natural Language Processing and Human Uniqueness
This lecture explores NLP concepts and the impact of AI chatbot on human agency. Students will examine how AI can generate human-like text and make use of generative AI tools to experience AI's creative potential firsthand.

IV. Generative AI, Misinformation and Intellectual Property
This lecture explores generative AI concepts, and discusses the potential misinformation and copyright issues of the generated contents. Students will examine how AI can generate diverse forms of digital contents and explore new opportunities of application.

V. AI Agent, Safety and Trust
This lecture delves into the development of AI agents in areas like games, autonomous vehicles, social robots, etc. Issues related to safety and trust will also be discussed. Students will engage with agentic AI tools to analyze AI's role in interactive experiences and discuss ethical implications.

VI. AI Ethical and Critical Awareness
Students will further reflect on the complex relationship between AI and its responsible use. Students will further explore the principles of AI governance and responsible use with the aim of developing an awareness of their own personal code of ethics around the use of AI in the studies, work, and recreation.

VII. In-Class Debate
Students will be given the debate topics and related materials in the format of flipped content for preparation. In-class debate will be held during the class.