



Locally Developed Courses

Introduction to Artificial Intelligence

For the 2025-2026 School Year

Introduction to the Introduction to Artificial Intelligence Course Sequence

Subject: Career and Technology Studies - Discipline: Computing Science

The original Sequence Introduction for the 15-level:

Introduction to Artificial Intelligence 15 will first delve into the history of artificial general intelligence and its subfields, including Neural Networks, Machine Learning, Expert Systems, Deep Learning, Natural Language Processing, and Machine Vision with Facial Recognition.

Following this exploration, students will investigate the impact of artificial intelligence training datasets on bias. Lastly, the course will prioritize the study of ethics and responsible AI principles, specifically emphasizing fairness, transparency, explainability, human-centeredness, privacy, and security.

With the continuation of Artificial Intelligence to the 25-level and 35-level, the following Sequence Introduction is included:

Artificial Intelligence is a course sequence designed for students who would like to explore various facets of artificial intelligence (AI) and consider the impact of AI on individuals and society. In Artificial Intelligence, students develop skills of critical thinking and problem solving as they consider how AI tools can be used, designed and selected to effectively accomplish tasks. Students are encouraged to be creative problem solvers as they formulate ideas for tool design and future AI tools. Throughout the course sequence, students manage information as they access and synthesize information on a variety of key topics, including the history and future of AI, the interplay between AI and popular culture, AI policies and guidelines, and the impact of geopolitics on policy-making.

In Artificial Intelligence, students examine various ethical issues associated with AI, with a particular emphasis placed on the issues surrounding data, including bias, data privacy and intellectual property rights. Students also consider diverse perspectives on a variety of AI issues and synthesize their understandings to inform their own perspectives. As well, in this course sequence students have the opportunity to consider how AI is impacting the nature of the workplace and workforce on a global scale.

Student Need

The original Student Need for the 15-level:

Learning artificial intelligence is essential for students to prepare for the future job market, develop critical thinking and problem-solving skills, understand ethical implications, and stay competitive in a rapidly changing world driven by technology. It empowers students to contribute to technological advancements and address global challenges responsibly.

With the continuation of Artificial Intelligence to the 25-level and 35-level, the following Student Need is included:

The course sequence, Artificial Intelligence, equips students with the knowledge, understanding and skills to navigate the constantly evolving world of artificial intelligence (AI). In Artificial Intelligence, students have the opportunity to enhance their digital literacy skills and their ability to engage critically with various AI technologies. This course sequence fosters the development of skills that may transfer to other real-world applications and provide students with the opportunity to explore possible career interests and pathways in artificial intelligence. The overall goal of Artificial Intelligence is to provide students with the opportunity to develop a nuanced understanding of the implications and possibilities of AI and greater insight into the importance of thinking critically and ethically about the technologies they use.

Courses in the Introduction to Artificial Intelligence Course Sequence

Introduction to Artificial Intelligence 15 (LDC1026)

Various facets of artificial intelligence are integrated into our daily lives, and the algorithms power many of our apps. This course will explore the inner workings of artificial intelligence, and its transformative influence on our ever-evolving world.

| Students will need access to a laptop or computer.

Prerequisites: None

Versions Available: (Each version must be locally approved by Board Motion prior to offering to students.)

Credit Level	First School Year	Last School Year
5	2023-2024	2026-2027

Artificial Intelligence 25 (LDC2026)

In Artificial Intelligence 25, students consider how AI systems gather, process and make sense of data and how there is a need for human accountability in the design and use of AI. Throughout the course, students use, analyze and evaluate a variety of AI tools.

The influence of AI in society is explored by examining the portrayal of AI in popular culture, AI's impact on the workplace and workforce, and the benefits and challenges of AI use in various societal and educational contexts. In Artificial Intelligence 25, there is a focus on examining ethical issues surrounding AI, including concerns about transparency in the way AI systems are designed, data privacy and bias. Students in this course undertake an exploration of career opportunities in the field of AI and describe the transferable skills that are developed through the study of AI.

| Access to computers and the Internet is required.

Prerequisites:

- All of the following:
 - Introduction to Artificial Intelligence 15 (LDC1026)

Versions Available: (Each version must be locally approved by Board Motion prior to offering to students.)

Credit Level	First School Year	Last School Year
5	2025-2026	2026-2027

Artificial Intelligence 35 (LDC3026)

In Artificial Intelligence 35, students research new trends in AI and explore how AI technologies may be designed and utilized in the future. As well, students use and analyze AI tools in order to determine their effectiveness and the need for further innovations and safeguards.

In this course, students examine the societal implications of AI through an analysis of its impact on popular culture, communication, intellectual property rights, and the workplace and workforce. Students also analyze a variety of ethical dilemmas and challenges that AI presents for society and articulate their own perspectives on AI issues. In Artificial Intelligence 35, students consider the issue of AI governance through the lens of how geopolitics shape policies. As well, students investigate emergent career trends in AI and reflect on how their study of AI has helped them to develop transferable skills that may benefit them in the future

| Access to computers and the Internet is required.

Prerequisites:

- All of the following:
 - Artificial Intelligence 25 (LDC2026)

Versions Available: (Each version must be locally approved by Board Motion prior to offering to students.)

Credit Level	First School Year	Last School Year
5	2025-2026	2026-2027

Curriculum

Curriculum Elements		Introduction to AI 15-5	Artificial Intelligence 25-5	Artificial Intelligence 35-5
1	Topic WHAT IS ARTIFICIAL INTELLIGENCE AND HOW IS IT USED IN OUR EVERYDAY LIVES?	✓		
1.1	General Outcome What is intelligence?	✓		
1.1.1	Specific Outcome Construct a definition of artificial intelligence.	✓		
1.1.2	Specific Outcome Explain how natural language processing and optical character recognition are use to facilitate human-computer interactions.	✓		
1.1.3	Specific Outcome Examine the Turing Test.	✓		
1.1.4	Specific Outcome Apply the concepts of the Turing Test to a chatbot.	✓		
1.1.5	Specific Outcome Analyze the results to see how close the chatbot get to passing as a human.	✓		
1.2	General Outcome What are the components of artificial intelligence?	✓		
1.2.1	Specific Outcome Describe the possible uses of artificial narrow intelligence (ANI).	✓		
1.2.2	Specific Outcome Explain how machine learning and deep learning are trained and leveraged to enhance algorithms.	✓		
1.2.3	Specific Outcome Examine big data and visualizations.	✓		
1.2.4	Specific Outcome Examine expert systems.	✓		
1.2.5	Specific Outcome Examine machine learning models.	✓		
1.2.6	Specific Outcome Explain the process and math behind model iteration.	✓		

Curriculum Elements		Introduction to AI 15-5	Artificial Intelligence 25-5	Artificial Intelligence 35-5
1.2.7	Specific Outcome Examine the math behind neural networks.	✓		
1.2.8	Specific Outcome Examine the design behind the five basic types of neural networks.	✓		
1.2.9	Specific Outcome Investigate an ethical consideration of AI technology.	✓		
1.2.10	Specific Outcome Identify the ethical ramifications related to the ethical considerations.	✓		
2	Topic HOW CAN I APPLY AI THEORIES AND CONCEPTS, WHILE PROFICIENTLY USING AI TERMINOLOGY ACROSS VARIOUS SCENARIOS?	✓		
2.1	General Outcome How are neural networks and transformers relevant in the contexts of natural language processing, computer vision, and speech recognition?	✓		
2.1.1	Specific Outcome Explain how neural networks work in the context of AI.	✓		
2.1.2	Specific Outcome Examine how recurrent neural networks are used.	✓		
2.1.3	Specific Outcome Examine the effect of gradients.	✓		
2.1.4	Specific Outcome Examine the purpose of transformers.	✓		
2.1.5	Specific Outcome Examine how perception is used in AI to create machine vision.	✓		
2.1.6	Specific Outcome Explore Gestalt Principles of Design.	✓		
2.1.7	Specific Outcome Train a model to accurately recognize audio input.	✓		
2.2	General Outcome How do computer vision, convolutional neural networks (CNNs), and generative adversarial networks (GANs) generate realistic content?	✓		
2.2.1	Specific Outcome Describe the role of CNNs.	✓		

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2.2.2	Specific Outcome Explore how a GAN model can be used to create new media (videos, images, music, text, etc.).	✓		
2.2.3	Specific Outcome Discuss the positive impact of GANs.	✓		
2.2.4	Specific Outcome Discuss the negative impact of GANs.	✓		
2.2.5	Specific Outcome Investigate how GANs are used in deepfake technology.	✓		
2.2.6	Specific Outcome Identify how to spot fake videos.	✓		
2.2.7	Specific Outcome Articulate how to report fake videos.	✓		
2.3	General Outcome How is AI used for sourcing and managing datasets and collaboration?	✓		
2.3.1	Specific Outcome Examine data repository sites used to share segmented data sets used for reporting or analysis.	✓		
2.3.2	Specific Outcome Use Collaboratory (Colab) to import python and graphing libraries.	✓		
2.3.3	Specific Outcome Use Colab to load a data set and adjust hyperparameters to create a “best-fit” for the resulting fit and error graphs.	✓		
2.3.4	Specific Outcome Analyze the purpose of Algorithmic Impact Assessments.	✓		
2.3.5	Specific Outcome Investigate how data repository sites and Colab can be used in the legal system.	✓		
2.3.6	Specific Outcome Assess challenges and ethical considerations of AI in the legal system.	✓		
2.4	General Outcome How can machine learning be leveraged to address environmental sustainability?	✓		
2.4.1	Specific Outcome Identify specific applications of AI in addressing environmental issues.	✓		
2.4.2	Specific Outcome Review climate and environmental data sources.	✓		

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2.4.3	Specific Outcome Demonstrate an understanding of the potential environmental benefits that can result from the use of AI technologies.	✓		
2.5	General Outcome How is AI used in gaming?	✓		
2.5.1	Specific Outcome Explore the use of AI in gaming.	✓		
2.5.2	Specific Outcome Investigate the use of recurrent neural networks to develop intelligent agents.	✓		
2.5.3	Specific Outcome Identify examples of AI in a game.	✓		
2.5.4	Specific Outcome Identify the game's rule parameters.	✓		
2.5.5	Specific Outcome Identify if the game's algorithm is deterministic or non-deterministic.	✓		
2.5.6	Specific Outcome Identify the issues inherent in data privacy and AI.	✓		
3	Topic An understanding of the field of artificial intelligence (AI) can be developed through the examination and application of AI tools and systems.		✓	✓
3.1	General Outcome How can examining the history and terminology of artificial intelligence help to facilitate an understanding of AI?		✓	
3.1.1	Specific Outcome Examine the history of artificial intelligence (AI) and the development of early AI tools.		✓	
3.1.2	Specific Outcome Apply relevant terminology to describe AI tools and systems.		✓	
3.2	General Outcome How do AI systems gather, process and make sense of data?		✓	
3.2.1	Specific Outcome Compare and contrast the various types of AI algorithms.		✓	
3.2.2	Specific Outcome Compare various methods used for AI data collection.		✓	

Curriculum Elements		Introduction to AI 15-5	Artificial Intelligence 25-5	Artificial Intelligence 35-5
3.2.3	Specific Outcome Examine how AI systems learn from data.		✓	
3.3	General Outcome How can AI tools be designed and selected to effectively accomplish tasks?		✓	
3.3.1	Specific Outcome Select and use a variety of AI tools to accomplish various specified tasks.		✓	
3.3.2	Specific Outcome Describe how the design of various AI tools impacts the user experience.		✓	
3.3.3	Specific Outcome Explain the importance of task-appropriate tool selection when using AI tools.		✓	
3.3.4	Specific Outcome Investigate current safeguards and limitations set on various AI tools.		✓	
3.4	General Outcome How can investigating new trends and leveraging key knowledge lead to a deeper understanding of AI?			✓
3.4.1	Specific Outcome Research new trends in AI.			✓
3.4.2	Specific Outcome Apply knowledge of AI terminology to the discussion and evaluation of AI tools and systems.			✓
3.5	General Outcome How might AI systems gather, process and make sense of data in the future?			✓
3.5.1	Specific Outcome Investigate how potential combinations of algorithms could be used to create general AI systems.			✓
3.5.2	Specific Outcome Explore how wider sets of data may be incorporated into AI tools and systems in the future.			✓
3.5.3	Specific Outcome Investigate how AI systems of the future might learn from and interact with data and people.			✓
3.6	General Outcome Why is it important to consider the effectiveness of AI tools and the need for further innovations and safeguards?			✓
3.6.1	Specific Outcome Use and evaluate the effectiveness of a variety of AI tools at accomplishing various specified tasks.			✓

Curriculum Elements		Introduction to AI 15-5	Artificial Intelligence 25-5	Artificial Intelligence 35-5
3.6.2	Specific Outcome Analyze and propose changes to the design of various AI tools to improve the user experience.			✓
3.6.3	Specific Outcome Formulate ideas for AI tools that could be developed in the future to accomplish various tasks.			✓
3.6.4	Specific Outcome Analyze safeguards and limitations set on various AI tools and generate suggestions to strengthen these tools.			✓
4	Topic Examining the benefits and challenges of artificial intelligence enhances digital literacy skills and promotes an understanding of the implications of AI technology for individuals and society.		✓	✓
4.1	General Outcome How can the various portrayals of AI in popular culture impact people's beliefs about artificial intelligence?		✓	
4.1.1	Specific Outcome Compare a variety of portrayals of AI in popular culture.		✓	
4.1.2	Specific Outcome Examine how portrayals of AI in popular culture influence people's beliefs about artificial intelligence.		✓	
4.2	General Outcome How can data be gathered and used in an ethical manner?		✓	
4.2.1	Specific Outcome Examine how bias can enter into data sets and how algorithms can both propagate and mitigate bias.		✓	
4.2.2	Specific Outcome Explain the importance of the ethical use of data in AI tools and systems.		✓	
4.2.3	Specific Outcome Examine the impact of AI on data privacy.		✓	
4.2.4	Specific Outcome Examine how the building of AI data sets has implications for intellectual property rights.		✓	
4.3	General Outcome In what ways can the use of AI create ethical issues?		✓	
4.3.1	Specific Outcome Examine ethical issues associated with AI.		✓	

Curriculum Elements		Introduction to AI 15-5	Artificial Intelligence 25-5	Artificial Intelligence 35-5
4.3.2	Specific Outcome Examine multiple perspectives on a variety of ethical issues in AI.		✓	
4.4	General Outcome How do AI policies and guidelines compare around the world?		✓	
4.4.1	Specific Outcome Compare various AI policies and guidelines from around the world.		✓	
4.5	General Outcome In what ways does AI create both benefits and challenges in societal and educational contexts?		✓	
4.5.1	Specific Outcome Discuss the benefits and challenges created by the use of AI in various societal and educational contexts.		✓	
4.6	General Outcome In what ways does AI have the capacity to influence both the workplace and the workforce?		✓	
4.6.1	Specific Outcome Examine the impact of AI on the workplace and the workforce.		✓	
4.7	General Outcome In what ways can human-like AI systems pose challenges?		✓	
4.7.1	Specific Outcome Examine how misinformation and disinformation can be created using AI tools.		✓	
4.7.2	Specific Outcome Analyze the implications of AI systems being able to mimic human creative output.		✓	
4.8	General Outcome In what ways can AI have an impact on popular culture?			✓
4.8.1	Specific Outcome Analyze a variety of portrayals of AI in popular culture.			✓
4.8.2	Specific Outcome Analyze the impact of AI on popular culture.			✓
4.9	General Outcome Why is it important to employ ethical best practices in AI model construction and use?			✓
4.9.1	Specific Outcome Investigate practices that would help to reduce bias in AI systems and tools.			✓
4.9.2	Specific Outcome Examine ethical best practices in the creation of data sets.			✓

Curriculum Elements		Introduction to AI 15-5	Artificial Intelligence 25-5	Artificial Intelligence 35-5
4.9.3	Specific Outcome Explain strategies that can be used to mitigate the impact of AI on data privacy.			✓
4.9.4	Specific Outcome Examine the issue of generative AI and intellectual property rights.			✓
4.10	General Outcome Why is it important to consider various perspectives on ethical issues in AI?			✓
4.10.1	Specific Outcome Analyze a variety of ethical dilemmas and challenges.			✓
4.10.2	Specific Outcome Articulate their own perspectives on a variety of ethical issues in AI.			✓
4.11	General Outcome How can geopolitics impact national and/or international AI policies?			✓
4.11.1	Specific Outcome Examine the role of geopolitics in shaping national and/or international policies governing AI.			✓
4.12	General Outcome How can AI tools and systems impact various forms of communication?			✓
4.12.1	Specific Outcome Examine the impact of AI on various forms of communication, including intercultural communication.			✓
4.13	General Outcome In what ways does the increased use of AI in the workplace and workforce create benefits and pose challenges?			✓
4.13.1	Specific Outcome Analyze the benefits and challenges created by the increased use of AI in the workplace and workforce.			✓
4.14	General Outcome How can the ever-increasing capabilities of AI systems create challenges?			✓
4.14.1	Specific Outcome Examine and analyze examples of misinformation and disinformation created with AI tools.			✓
4.14.2	Specific Outcome Analyze the implications of AI being able to mimic human level general intelligence.			✓
5	Topic Exploring career pathways promotes personal growth and lifelong learning.		✓	✓

Curriculum Elements		Introduction to AI 15-5	Artificial Intelligence 25-5	Artificial Intelligence 35-5
5.1	<p>General Outcome</p> <p>How can the study of AI foster career opportunities and skill development?</p>		✓	
5.1.1	<p>Specific Outcome</p> <p>Examine a variety of career opportunities related to AI.</p>		✓	
5.1.2	<p>Specific Outcome</p> <p>Describe transferable skills developed through the study of AI.</p>		✓	
5.2	<p>General Outcome</p> <p>How can a reflective and analytical process be applied to career planning?</p>			✓
5.2.1	<p>Specific Outcome</p> <p>Investigate current careers and emergent career trends in AI.</p>			✓
5.2.2	<p>Specific Outcome</p> <p>Reflect on how transferable skills developed through the study of AI may benefit them in future professional endeavours.</p>			✓

Statement of Overlap with Existing Programs

Similar / Overlapping Courses	Description of Similarity / Overlap - Rationale
Robotics Artificial Intelligence	In Robotics Artificial Intelligence students "will examine artificial intelligence in a robotics system."
	In Introduction to Artificial Intelligence, students will examine artificial intelligence beyond robotics, and as such, Introduction to Artificial Intelligence extends the outcomes in the 1-credit CTS course, Robotics Artificial Intelligence (ELT3200).