

# **ARTIFICIAL INTELLIGENCE (ARIN)**

### ARIN 100 Fundamentals of Artificial Intelligence Units: 3.00

A general introduction to how modern Artificial Intelligence technology works and how to work with it. Topics will range from the effective and ethical use of AI to how it is changing the landscape of education and industry. The history of automated technology and AI will be covered, and students will gain both an appreciation for, and an understanding of, how modern AI came to be.

Learning Hours: 120 (36 Lecture, 84 Private Study) Requirements: Prerequisite None. Offering Faculty: Faculty of Arts and Science Course Learning Outcomes:

- 1. Explain foundational concepts in artificial intelligence and the historical evolution of AI technologies, while critically reflecting on the ethical and societal impacts of these technologies.
- 2. Evaluate the role of AI in shaping modern industries and education, analyzing both the benefits and potential dangers of AI systems in various sectors.
- 3. Identify both the opportunities and limitations of Al in their respective fields (e.g., business, healthcare, engineering, arts, science, etc.).
- 4. Communicate, through written and oral presentations, informed perspectives on the ethical implications of AI technologies, engaging in debates about privacy, bias, and the potential dangers of AI in decision-making processes.

#### ARIN 101 Artificial Intelligence in Society Units: 3.00

A non-technical overview of what artificial intelligence is (and isn't) and how it affects society. "Algorithms" in social media and elsewhere. Generative Al. Bias, fairness, and ethics. Social, legal and commercial aspects. Public perceptions and reactions. A brief history and the potential future. Learning Hours: 120 (36 Lecture, 84 Private Study) Requirements: Prerequisite None. Offering Faculty: Faculty of Arts and Science Course Learning Outcomes:

- 1. Assess current media reporting about AI, especially basic uses, capabilities, and limitations of AI.
- 2. Situate current Al systems within a broader historical and social context.
- 3. Critically assess current controversies in the uses and effects of AI.

### ARIN 201 Ethics and Fairness in Artificial Intelligence Units: 3.00

A thorough investigation of the complex ethical and fairness conundrums raised by artificial intelligence, such as: Who is responsible when AI causes harm? Must we give up privacy to get technological innovation? Is automated decision-making fair? What causes social media echo chambers? Can tech companies be effectively regulated? How can we prevent unethical AI from being built? Explores more intricate ethical theories, cutting-edge technology, and useful techniques for developing morally sound AI solutions.

**Learning Hours:** 120 (36 Lecture, 84 Private Study) **Requirements:** Prerequisite (Level 2 or above and a minimum grade of C- in ARIN 101/3.0) or permission of the School.

Offering Faculty: Faculty of Arts and Science Course Learning Outcomes:

- 1. Analyze issues of ethics and fairness in Al, including implementations and applications.
- 2. Evaluate articles, reporting, and other sources for ethics in Al.
- 3. Communicate effectively in writing, discussing, and presenting ethical issues in Al.
- 4. Assess ethical consequences of AI.



## ARIN 210 Applications of Artificial Intelligence Units: 3.00

Embark on a comprehensive journey through the dynamic landscape of artificial intelligence. Uncover the power of natural language processing and computer vision. Dive into ethical considerations and explore AI's impact in various domains. Engage in hands-on projects to master cuttingedge AI techniques and technologies, forging a path toward innovative solutions for real-world challenges. **Learning Hours:** 120 (36 Lecture, 84 Private Study) **Requirements:** Prerequisite Level 2 or above and a minimum grade of C- in both ARIN 101/3.0 and COGS 100/3.0. **Offering Faculty:** Faculty of Arts and Science **Course Learning Outcomes:** 

- 1. Demonstrate an understanding of fundamental AI concepts and applications.
- 2. Apply AI algorithms in real-world scenarios.
- 3. Design, develop, and assess AI-driven solutions to example problems.
- 4. Clearly convey Al concepts, methodologies, and outcomes to a non-technical audience.