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THE CHINESE UNIVERSITY OF HONG KONG
Print Course Catalog Details

May 10, 2023
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Academic Org: Dept of Computer Sci & Engg – Subject: AI: Systems & Tech

Course: AIST1000 **Course ID:** 013521 **Eff Date:** 2022-07-01 **Crse Status: Active** **Apprv. Status:** Approved 【Course Rev】

Introduction to Artificial Intelligence and Machine Learning 人工智能與機器學習入門

This course covers the basic concepts, problems, approaches and applications of artificial intelligence and machine learning. It provides an introduction to various topics in AI systems and technologies, e.g., an overview of AI, machine learning theory and methods, ML in data science, neural networks and deep learning, hardware and software technologies for AI systems, natural language processing, computer vision, AI in games and sports, biomedical intelligence, intelligent manufacturing and robotics, ethical and legal issues with AI, etc. It discusses the applications of engineering principles to selected AI and ML problems. It also explores the future possibilities and challenges of AI.

本科涵蓋人工智能和機器學習的基本概念、問題、方法和應用，介紹AI系統和技術的各個主題，例如：AI概述、機器學習理論和方法、數據科學、神經網絡和深度學習、AI系統的硬件和軟件技術、自然語言處理、計算機視覺、遊戲和運動中的AI、生物醫學智能、智能製造和機器人技術、有關AI的道德和法律問題等。本科討論工程原理在某些AI和ML問題中的應用，亦探討AI在未來的可能性和挑戰。

Grade Descriptor: A

EXCELLENT – exceptionally good performance and far exceeding expectation in all or most of the course learningoutcomes; demonstration of superior understanding of the subject matter, the ability to analyze problems and applyextensive knowledge, and skillful use of concepts and materials to derive proper solutions.

有關等級說明的資料，請參閱英文版本。

B

GOOD – good performance in all course learning outcomes and exceeding expectation in some of them; demonstration ofgood understanding of the subject matter and the ability to use proper concepts and materials to solve most of theproblems encountered.

有關等級說明的資料，請參閱英文版本。

C

FAIR – adequate performance and meeting expectation in all course learning outcomes; demonstration of adequateunderstanding of the subject matter and the ability to solve simple problems.

有關等級說明的資料，請參閱英文版本。

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MARGINAL – performance barely meets the expectation in the essential course learning outcomes; demonstration ofpartial understanding of the subject matter and the ability to solve simple problems.

有關等級說明的資料，請參閱英文版本。

F

FAILURE – performance does not meet the expectation in the essential course learning outcomes; demonstration ofserious deficiencies and the need to retake the course.

有關等級說明的資料，請參閱英文版本。

Equivalent Offering:
Units: 1 (Min) / 1 (Max) / 1 (Acad Progress)
Grading Basis: Graded
Repeat for Credit: N
Multiple Enroll: N
Course Attributes:

Topics:

COURSE OUTCOMES

Learning Outcomes:

At the end of the course of studies, students will
1. have some basic ideas of artificial intelligence and machine learning;
2. know the application areas of artificial intelligence and machine learning;
3. understand the limitations and possibilities of different approaches to artificial intelligence;
4. have a general picture of the overall curriculum of the AIST undergraduate programme, especially on the choice of streams.

Course Syllabus:

Week 1: Introduction to the course and requirements
Week 2: An overview of AI
Week 3: Machine learning theory and methods; data science (invited lecture by speaker from AIST/ CSE)
Week 4: Neural networks and deep learning (invited lecture by speaker from AIST/ CSE)
Week 5: Hardware and software technologies for AI systems (invited lecture by speaker from AIST/ CSE)

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Week 6: Natural language processing and applications (invited lecture by speaker from AIST/ CSE)
Week 7: Computer vision; AI in games and sports (invited talk by speaker from the industry)
Week 8: Biomedical intelligence (invited lecture by speaker from BME)
Week 9: Intelligent manufacturing and robotics (invited lecture by speaker from MAE)
Week 10-13: Project presentation and discussion

Assessment Type:

Attendance	: 20%
Project	: 50%
Participation	: 30%

Feedback for Evaluation:

1. Course evaluation and questionnaire
2. Question-and-answer sessions during class
3. Student consultation during office hours or online

Required Readings:

1. Andrew Ng, "Machine Learning Yearning (Draft Version)," 2018, https://www.deeplearning.ai/machine-learning-yearning/ (assessed November 1, 2019).

Recommended Readings:

OFFERINGS
1. AIST1000   Acad Organization=CSD; Acad Career=UG

COMPONENTS
LEC : Size=30; Final Exam=N; Contact=1
PRJ : Size=30; Final Exam=N; Contact=1

ENROLMENT REQUIREMENTS

CAF
eLearning hrs for blended cls   0
No. of micro-modules   0
Research components (UG)   0%

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