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

Introduction to Artificial Intelligence and Machine Learning  
本科涵蓋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.

**Grade Descriptor:**

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

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

- **C** - FAIR – adequate performance and meeting expectation in all course learning outcomes; demonstration of adequate understanding of the subject matter and the ability to solve simple problems.
MARGINAL – performance barely meets the expectation in the essential course learning outcomes; demonstration of partial understanding of the subject matter and the ability to solve simple problems.

有关等級說明的資料，請參閱英文版本。

F

FAILURE – performance does not meet the expectation in the essential course learning outcomes; demonstration of serious 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)
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:

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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