City University of Hong Kong
Course Syllabus

offered by Department of Computer Science
with effect from Semester A 2024/25

Part I Course Overview

Course Title:	Guided Study in Artificial Intelligence
Course Code:	CS6535
Course Duration:	One semester
Credit Units:	3 credits
Level:	P6
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: *(Course Code and Title)*	Nil
Precursors: *(Course Code and Title)*	Nil
Equivalent Courses: *(Course Code and Title)*	Nil
Exclusive Courses: *(Course Code and Title)*	CS6534 Guided Study, CS6536 Guided Study in Data Science, CS6537 Guided Study in Information Security

Part II Course Details

1. Abstract

The aim of this course is to provide an opportunity to explore a research area of **artificial intelligence** in consultation with a member of the academic staff. The objectives are to develop in-depth knowledge of a chosen field of interest and to exercise the skill and techniques acquired in earlier courses to discover innovative approach to solving artificial intelligence related problems. The students will also have the opportunity to develop documentation and presentation skill in conveying the results of his/her work.

2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs	Weighting (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	*A2*	*A3*
1.	Identify a challenging **artificial intelligence** related problem, analyze the problem in detail in the context of an extensive review of existing literature.		✓		
2.	Propose innovative solutions, formulate a detailed design of the solutions and comparison of the proposed solution with existing approaches.			✓	✓
3.	Document and report the system design process, background study and expected performance of the solution.				✓
		100%			

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: *Accomplishments*
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

3. Learning and Teaching Activities (LTAs)

(LTAs designed to facilitate students' achievement of the CILOs.)

Teaching pattern:

Suggested lecture/tutorial/laboratory mix: 8 hours individual consultation.

Each student is expected to solicit the support of an academic supervisor on a one to one basis for each project.

The role of the supervisor is to closely monitor the project progress with project meetings regularly, in order to give advice to the student, to establish criteria for assessment, and to advise on possible solutions and potential problems.

LTA	Brief Description	CILO No.			Hours/week (if applicable)
		1	2	3	
Project planning	Students will identify the problem for investigation and draft a project plan with appropriate milestones.	✓			
Project proposal	Students will analyze the problem identified and research on existing and/or related solutions. Then, in consultation with their supervisors, they will propose their own designs and solutions.		✓		
Project documentation	Students will document and explain their work in regular progress reports and a final report. At the end, they are required to present their projects in the form of oral presentation and demonstration.			✓	

4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.			Weighting	Remarks
	1	2	3		
Continuous Assessment: 100%					
Project management and individual development of the student	✓			20%	For assessment of technical merit, report, and presentation, the project committee assigns two examiners, including the supervisor. The Supervisor is required to give detailed grading reports on all aspects of assessment. The Assessor will evaluate the CILOs 2 and 3 of the project. The Course Leader will review all projects, moderate consistency across a wide range of projects, and, where necessary, resolve discrepancies between grading of the Assessor and the Supervisor, drawing on the expertise of domain experts as needed.
Technical merit of the proposed solution, including the degree of innovation in the proposed design		✓		50%	
Standard of final documentation			✓	20%	
Standard of oral presentation			✓	10%	
Examination: 0%					
				100%	

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Applicable to students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Project planning	1.1 ABILITY to IDENTIFY problems for investigations. 1.2 ABILITY to PLAN a project schedule with appropriate milestones, and MAINTAIN the project schedule.	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. Project proposal	2.1 ABILITY to ANALYZE a problem. 2.2 ABILITY to EVALUATE, COMPARE, and CONTRAST existing solutions. 2.3 ABILITY to DESIGN and INNOVATE new solutions.	High	Significant	Moderate	Basic	Not even reaching marginal levels
3. Project documentation	3.1 ABILITY to DOCUMENT the progress of the project in interim reports. 3.2 ABILITY to DOCUMENT the OUTCOMES of the project in a final report. 3.3 ABILITY to DEMONSTRATE project outcomes in an oral presentation.	High	Significant	Moderate	Basic	Not even reaching marginal levels

Applicable to students admitted from Semester A 2022/23 to Summer Term 2024

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B)	Marginal (B-, C+, C)	Failure (F)
1. Project planning	1.1 ABILITY to IDENTIFY problems for investigations. 1.2 ABILITY to PLAN a project schedule with appropriate milestones, and MAINTAIN the project schedule.	High	Significant	Moderate to Basic	Not even reaching marginal levels
2. Project proposal	2.1 ABILITY to ANALYZE a problem. 2.2 ABILITY to EVALUATE, COMPARE, and CONTRAST existing solutions. 2.3 ABILITY to DESIGN and INNOVATE new solutions.	High	Significant	Moderate to Basic	Not even reaching marginal levels
3. Project documentation	3.1 ABILITY to DOCUMENT the progress of the project in interim reports. 3.2 ABILITY to DOCUMENT the OUTCOMES of the project in a final report. 3.3 ABILITY to DEMONSTRATE project outcomes in an oral presentation.	High	Significant	Moderate to Basic	Not even reaching marginal levels

Part III Other Information (more details can be provided separately in the teaching plan)

1. Keyword Syllabus

(An indication of the key topics of the course.)

Typical topic areas include: Reinforcement learning, Uncertainty reasoning, Searching, Planning and acting, Logics, Knowledge representation and inference, Computer vision, Natural language processing, Robotics, AI computer game.

The project starts with a specification phase in which the student is to arrive at a set of problem statements and objectives. This is formalized in a project definition and study plan. During the course of the project, the student will be guided by a supervisor from the academic staff to produce the following reports: Project Definition, Survey of Related Work, Design/Analysis, Final Report (which may include any implementation and evaluation aspects).

2. Reading List

2.1 Compulsory Readings

(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

	N/A

2.2 Additional Readings

(Additional references for students to learn to expand their knowledge about the subject.)

	N/A