THE EDUCATION UNIVERSITY OF HONG KONG

Course Outline

Part I

Programme Title **:** All Undergraduate Programmes
Programme QF Level **:** 5
Course Title **:** Self-Regulated Learning in Artificial Intelligence with Chatbot
Course Code **:** OCI1003
Department/Unit **:** Centre for Learning, Teaching and Technology (LTTC)
Credit Points **:** 1
Contact Hours **:** 50 hours for non-formal learning experience
Pre-requisite(s) **:** Nil
Medium of Instruction **:** English
Course Level **:** 1

Part II

The University's Graduate Attributes and seven Generic Intended Learning Outcomes (GILOs) represent the attributes of ideal EdUHK graduates and their expected qualities respectively. Learning outcomes work coherently at the University (GILOs), programme (Programme Intended Learning Outcomes) and course (Course Intended Learning Outcomes) levels to achieve the goal of nurturing students with important graduate attributes.

In gist, the Graduate Attributes for Sub-degree, Undergraduate, Taught Postgraduate, Professional Doctorate and Research Postgraduate students consist of the following three domains (i.e. in short "PEER & I"):

- **P**rofessional **E**xcellence;
- **E**thical **R**esponsibility; **&**
- **I**nnovation.

The descriptors under these three domains are different for the three groups of students in order to reflect the respective level of Graduate Attributes.

The seven GILOs are:

1. Problem Solving Skills
2. Critical Thinking Skills
3. Creative Thinking Skills

4a. Oral Communication Skills

4b. Written Communication Skills

5. Social Interaction Skills
6. Ethical Decision Making

7. Global Perspectives

1. Course Synopsis

This course aims to empower students to become self-regulated learners in the field of Artificial Intelligence (AI) through the utilisation of a chatbot (e.g. OpenAI's ChatGPT, Google's Bard, etc). A chatbot is a computer program that simulates human conversation and can be used to provide information, answer questions, and offer feedback on student learning. With the assistance of the chatbot, students can apply the principles of self-regulated learning to take control of their own AI learning experiences outside the classroom. They can also benefit from the flexibility to engage in learning anytime and from anywhere, fostering a self-directed and personalised learning journey.

The course will begin by providing online self-study materials that give an overview of AI technologies and introduce the concept of self-regulated learning and its importance in the AI domain. Students will learn how to set their goals, plan their activities, monitor their progress, and reflect on their outcomes. They will also learn how to identify their strengths and weaknesses and develop strategies to overcome their weaknesses. Throughout the course, the chatbot will play the role of virtual mentors and learning companions to facilitate students in developing essential self-regulated learning skills through non-formal learning experience. Furthermore, students completing this course will receive a certificate from the LTTC to recognize their dedication in developing their AI literacy through self-regulated learning.

2. Course Intended Learning Outcomes (CILO$_s$)

Upon completion of this course, students will be able to:

- CILO$_1$ Understand the concepts of self-regulated learning and its importance in the field of AI;
- CILO$_2$ Plan for AI learning activities, monitor their progress, and evaluate the outcomes with the feedback provided by a chatbot;
- CILO$_3$ Reflect on individual strengths and weaknesses in AI learning and develop strategies to address areas of improvement.

3. Content, CILOs and Teaching & Learning Activities

Course Content	CILOs	Suggested Teaching & Learning Activities
Introduction • Overview of AI technologies • Fundamental concepts of self-regulated learning	CILO$_1$	• Online self-study • Online self-tests • Conversations with a chatbot

Course Content	CILOs	Suggested Teaching & Learning Activities
• Significance of self-regulated learning in the AI domain • Utilisation of a chatbot to access information and receive feedback to support self-regulated learning		
<u>Self-Regulated Learning</u> • Consultation with the course coordinator to seek pre-approval for the planned non-formal learning experience and learning goals • Participation in non-formal learning experience that emphasise hands-on, practical experiences to facilitate learning and understanding of AI[#] • Recognised non-formal learning experience have a wide range of options, including but not limited to[^]: o Projects: Participating in research initiatives or assisting faculty members with project work o Workshops: Enrolling in skill-building workshops offered by EdUHK o Certifications: Earning professional/industrial certifications o Study trips: Joining trips to industry sites, laboratories, institutions or other locations that provide practical exposure and relevant hands-on learning experiences organised by EdUHK o Competitions: Participating in academic competitions	CILO*1,2*	• Consultation • Projects, workshops, certifications, study trips, competitions, and/or conferences, etc • Conversations with a chatbot

[#] The activities should pertain to AI learning. To avoid the doubt of double benefits, these learning activities should neither be included in the assessment of a credit-bearing course nor be submitted to the Experiential Learning and Achievements Transcript (ELAT) system, and they should not offer remuneration. Recommended activities will be promoted on the website of LTTC.

[^] Students have to consult the course coordinator for recognised non-formal learning experience and seek his/her pre-approval.

Course Content	CILOs	Suggested Teaching & Learning Activities
o Conferences: Presenting academic/research work from EdUHK at conferences • Utilisation of a chatbot to offer guidance and support in one or more areas of AI learning, including but not limited to[@]: o Machine learning o Natural language processing o Computer vision o Robotics o Virtual assistants		
Reflective Practice • Identification of individual strengths and weaknesses in AI learning • Development of strategies to address areas of improvement	CILO*1,2,3*	• Reflective journal • Conversations with a chatbot

4. Assessment

Assessment Tasks[*]	Weighting (%)	CILO
Every student is required to create an ePortfolio consisting of the following elements[%]: (a) Evidence of completion of self-regulated learning experiences in AI, including but not limited to: o Records or logs documenting the time spent and engagement in activities o Certificates or letters of participation and/or completion issued by organisers, with clear information indicating the number of hours for active experiences involved in the activities o Outputs achieved by students in case of assisting faculty members with project work o History of conversations with a chatbot in support of learning	100%	CILO*1,2,3*

[@] Students are entirely accountable for the accuracy of the information delivered by a chatbot and are expected to conduct fact-checking. They may seek help from the course coordinator whenever necessary.

[*] This course will be graded solely on the basis of YC (Complete) to indicate successful course completion. Credit points earned will not be included in the calculation of the GPA nor the credit points for graduation. Students who successfully complete the requirements of the course will have their course completion recorded on their transcripts.

[%] Students have to submit an application with completed assessment tasks to the course coordinator for final approval by a specified deadline.

Assessment Tasks*	Weighting (%)	CILO
(b) A summary of learning goals and activities along with an explanation of how the learning goals are met (c) A reflective journal (of approximately 1000 words) on analysis of self-regulated learning experiences in AI, including: o What has been learned o Difficulties encountered o Strengths and weaknesses o Way forward		

5. Use of Generative AI in Course Assessments

Please select one option only that applies to this course:

☐ ***Not Permitted***: In this course, the use of generative AI tools is not allowed for any assessment tasks.

☑ ***Permitted***: In this course, generative AI tools may be used in some or all assessment tasks. Instructors will provide specific instructions, including any restrictions or additional requirements (e.g., proper acknowledgment, reflective reports), during the first lesson and in relevant assessment briefs.

6. Required Text(s)

Nil

7. Recommended Readings

Cameron, R. M. (2019). A.I. – 101: *A primer on using artificial intelligence in education*. Exceedly Press.

Charniak, E. (2019). *Introduction to deep learning*. The MIT Press.

Cleary, T. J. (2018). *The self-regulated learning guide: Teaching students to think in the languages of strategies*. Routledge.

Goodfellow, I., Bengio, Y., & Courville, A. (2016). *Deep learning*. The MIT Press.

Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promises and implications for teaching and learning*. The Center for Curriculum Redesign.

Hunter, N. (2023). *The art of prompt engineering with chatgpt: A hands-on guide (Learn AI tools the fun way!)*. Independently published.

Lesgold, A. M. (2019) *Learning for the age of artificial intelligence: Eight education competences*. New York: Routledge.

Rothman, D. (2018). *Artificial intelligence by example: Develop machine intelligence from scratch using real artificial intelligence use cases*. Packt Publishing.

Russell, S., & Norvig, P. (2022). *Artificial intelligence: A modern approach* (4th ed.). Pearson Education India.

Seli, H. (2019). *Motivation and learning strategies for college success: A focus on self-regulated learning* (6th ed.). Routledge.

Wolfram, S. (2023). *What is chatgpt doing … and why does it work*. Wolfram Research, Inc.

8. Related Web Resources

What Is Self-Regulated Learning?
https://www.education.vic.gov.au/school/teachers/teachingresources/high-ability-toolkit/Pages/self-regulated-learning.aspx

Top 10 Learning Resources for AI: A Comprehensive Guide
https://medium.com/@this.shoaib/top-10-learning-resources-for-artificial-intelligence-a-comprehensive-guide-6fb72c31a921

Microsoft Learn
https://learn.microsoft.com/en-us/training/

AI4K12 – AI for K-12 Working Group
https://github.com/touretzkyds/ai4k12/wiki

AI Experiments
https://experiments.withgoogle.com/collection/ai

Introducing ChatGPT
https://openai.com/blog/chatgpt

Poe – Quora's Chatbot
https://poe.com

Generative AI
https://ai.google/discover/generativeai

Midjourney - A text-to-picture AI
https://www.midjourney.com

DALL-E-2 - A text-to-picture AI
https://openai.com/product/dall-e-2

9. Related Journals

Nil

10. Academic Honesty

The University upholds the principles of honesty in all areas of academic work. We expect our students to carry out all academic activities honestly and in good faith. Please refer to the Policy on Academic Honesty, Responsibility and Integrity

(https://www.eduhk.hk/re/uploads/docs/000000000016336798924548BbN5). Students should familiarize themselves with the Policy.

11. Others

Nil

Last update: 8-7-2025

香港教育大學

科目大綱

第一部分

課程名稱	**：**	所有本科科目
科目 QF 程度	**：**	5
科目名稱	**：**	使用聊天機器人在人工智能領域進行自主學習 Self-Regulated Learning in Artificial Intelligence with Chatbot
科目編號	**：**	待定
負責學系/單位	**：**	教學科技中心
學分	**：**	1
教學課時	**：**	50 小時的非正規學習體驗
先修科目	**：**	無
授課語言	**：**	中文
程度	**：**	1

第二部分

香港教育大學(教大)的畢業生素質(Graduate Attributes)及七個共通學習成果(Seven Generic Intended Learning Outcomes, 7 GILOs) 分別代表了教大畢業生應具備的素質及能力。學習成果分為大學層面(GILOs)、課程層面(PILOs)以及科目層面(CILOs)，三個層面的學習成果相輔相成，共同培育學生發展所需的重要畢業生素質。

副學位學生、本科生、修課式研究生、專業博士研究生以及研究式研究生的畢業生素質包含以下三個範疇「英文簡稱 "PEER & I"」：

- 專業卓越 (Professional Excellence)
- 道德責任 (Ethical Responsibility)
- 創新 (Innovation)

就上述三個範疇，大學為本科生、修課式研究生以及研究式研究生訂立了不同的指標，以反映其素質水平。

七個共通學習成果(7 GILOs)分別是：

1. 解決問題能力 (Problem Solving Skills)
2. 明辨性思維能力 (Critical Thinking Skills)
3. 創造性思維能力 (Creative Thinking Skills)

4a. 口頭溝通能力 (Oral Communication Skills)

4b. 書面溝通能力 (Written Communication Skills)

5. 社交能力 (Social Interaction Skills)
6. 倫理決策 (Ethical Decision Making)
7. 全球視野 (Global Perspectives)

1. 科目概要

本科目旨在通過利用聊天機器人（例如 OpenAI 的 ChatGPT、Google 的 Bard 等）使學生成為人工智能（Artificial Intelligence, AI）領域的自主（Self-regulated）學習者。聊天機器人是一種類比人類對話的電腦程式，可用於提供資訊、回答問題和對學生學習提供反饋。在聊天機器人的協助下，學生可以應用自主學習的原則來掌握自己在課堂外的人工智能學習體驗。他們還可以從隨時隨地參與學習的靈活性中受益，從而促進自主和個人化的學習之旅。

本科目將首先提供在線自學材料，概述人工智能技術，並介紹自主學習的概念及其在人工智能領域的重要性。學生將學習如何設定目標、計劃活動、監控進度並反思結果。他們還將學習如何識別自己的優勢和弱項，並制定克服弱項的策略。在整個科目中，聊天機器人將扮演虛擬導師和學習夥伴的角色，通過非正規的學習體驗（non-formal learning experience），幫助學生培養基本的自主學習技能。此外，完成本科目的學生將獲教育科技中心（LTTC）頒發證書，以認可他們通過自主學習培養人工智能素養的努力與成果。

2. 科目預期學習成果

成果一： 了解自主學習的概念及其在人工智能領域的重要性；

成果二： 規劃人工智能學習活動，監控進度，並評估聊天機器人反饋的結果；

成果三： 反思自身在人工智能學習方面的優勢和弱項，並制定改進策略。

3. 科目內容、預期學習成果及教與學活動

教授內容	科目預期學習成果 (CILOs)	教與學活動
<u>介紹</u> • 人工智能技術概述 • 自主學習的基本概念 • 自主學習在人工智能領域的意義 • 利用聊天機器人獲取資訊並接收反饋以支援自主學習	成果一	• 在線自學 • 在線自測 • 與聊天機器人的對話
• 自主學習 • 與科目統籌協商，並於事前請准計劃的非正規學習體驗及學習目標	成果一 成果二	• 諮詢 • 專題研習、研討會、認證、考察、競賽和/或學術會議等 • 與聊天機器人的對話

• 參與非正規學習體驗，強調動手實踐的經驗，以促進學習和理解人工智能[#] • 認可的非正規學習體驗有多種選擇，包括但不限於[^]： o 專題研習：參與研究計劃或協助教職員進行項目工作 o 工作坊：參加教大舉辦的技能培養工作坊 o 認證：獲得專業/行業認證 o 考察團：參加由教大舉辦的行業考察團，參觀實驗室、機構或其他實踐及體驗學習場地 o 比賽：參加學術競賽 o 學術會議：在學術會議上分享教大的學術/研究成果 • 利用聊天機器人在人工智能學習的一個或多個領域提供指導和支援，包括但不限於[@]： o 機器學習 o 自然語言處理 o 電腦視覺 o 機器人 o 虛擬助手		
<u>反思性實踐</u> • 識別人工智能學習中的個人優勢和弱項 • 制定策略以改進不足之處	成果一 成果二 成果三	• 反思報告 • 與聊天機器人的對話

[#] 活動應與人工智能學習有關。為避免雙重利益，這些學習活動不應包括在計算學分科目的評估中，也不應列入體驗式學習和成就成績單（ELAT）系統，並不應從中獲得報酬。推薦的活動將在教學科技中心的網站上發佈。

[^] 學生如欲進行認可的非正規學習體驗，須徵詢科目統籌的意見，並預先徵得其批准。

[@] 學生須對聊天機器人提供的資訊的準確性負全部責任，並應進行事實核查。如有需要，他們可能會向科目統籌尋求協助。

4. 評核

評核課業*	所佔比重	科目預期學習成果 (CILOs)
每個學生都必須創建一個由以下元素組成的電子學習歷程檔案%： (a) 完成人工智能自主學習體驗的證據，包括但不限於： o 文字紀錄或登入紀錄以顯示在活動中花費的時間和參與情況； o 由主辦單位發出的參與和/或結業證書或信函，並明確指出主要活動所包含的時數； o 學生在協助教職員完成項目工作時取得的成果；以及 o 與聊天機器人在學習支援上的對話紀錄。 (b) 學習目標和活動的摘要，以及這些活動如何實現學習目標的解釋 (c) 反思報告（約 1600 字），內容涉及分析進行人工智能自主學習的體驗，包括： o 學到了什麼； o 遇到的困難； o 優勢和弱項；以及 o 展望未來。	100%	成果一 成果二 成果三

5. 生成式人工智能於科目評核的使用

請僅選擇一項適用於本科目的選項：

☐ *不允許使用*：本科目中的所有評核項目均不得使用生成式人工智能工具。

☑ *允許使用*：本科目允許學生在部分或全部評核項目中使用生成式人工智能工具。教師將於第一堂課及相關評核說明中提供具體指引，包括任何使用限制或額外要求（例如：適當標註、撰寫反思報告等）。

6. 指定教科書

無

7. 推薦書目

* 成功完成本科目後，成績表上將顯示 YC（Complete 完成）。所獲得的學分將不包括在績點（GPA）的計算中，也不計入畢業的學分。

% 學生必須在指定的截止日期前向科目統籌提交已完成的評估課業，以申請核准完成科目。

英文書目

Cameron, R. M. (2019). A.I. – 101: *A primer on using artificial intelligence in education*. Exceedly Press.

Charniak, E. (2019). *Introduction to deep learning*. The MIT Press.

Cleary, T. J. (2018). *The self-regulated learning guide: Teaching students to think in the languages of strategies*. Routledge.

Goodfellow, I., Bengio, Y., & Courville, A. (2016). *Deep learning*. The MIT Press.

Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promises and implications for teaching and learning*. The Center for Curriculum Redesign.

Hunter, N. (2023). *The art of prompt engineering with chatgpt: A hands-on guide (Learn AI tools the fun way!)*. Independently published.

Lesgold, A. M. (2019) *Learning for the age of artificial intelligence: Eight education competences*. New York: Routledge.

Rothman, D. (2018). *Artificial intelligence by example: Develop machine intelligence from scratch using real artificial intelligence use cases*. Packt Publishing.

Russell, S., & Norvig, P. (2022). *Artificial intelligence: A modern approach* (4th ed.). Pearson Education India.

Seli, H. (2019). *Motivation and learning strategies for college success: A focus on self-regulated learning* (6th ed.). Routledge.

Wolfram, S. (2023). *What is chatgpt doing … and why does it work*. Wolfram Research, Inc.

中文書目

AI4Kids（2020）。*學 AI 真簡單*。香港：茶杯雜誌出版有限公司。

西内啟(2020)。*機器學習的數學基礎 ——AI、深度學習打底必讀*。台北：旗標出版股份有限公司。

林沁(譯)(2023)。*你好啊，人工智能*。太原：書海出版社。

黃永健、韓宜飛（2021）。*極簡 AI 入門──一本書讀懂人工智能思維與應用*。北京：人民郵電出版社。

黃建庭（2021）。*機器學習入門——使用 Scikit-Learn 與 TensorFlow*。台北：碁峰資訊股份有限公司。

雷明（2019）。*機器學習與應用*。北京：清華大學出版社。

衛宮紘(譯)(2020)。*圖解 AI──機器學習和深度學習的技術與原理*。台北：碁峰資訊股份有限公司。

8. 相關網絡資源

What Is Self-Regulated Learning?
https://www.education.vic.gov.au/school/teachers/teachingresources/high-ability-toolkit/Pages/self-regulated-learning.aspx

Top 10 Learning Resources for AI: A Comprehensive Guide

https://medium.com/@this.shoaib/top-10-learning-resources-for-artificial-intelligence-a-comprehensive-guide-6fb72c31a921

Microsoft Learn

https://learn.microsoft.com/zh-hk/

AI4K12 – AI for K-12 Working Group

https://github.com/touretzkyds/ai4k12/wiki

AI Experiments

https://experiments.withgoogle.com/collection/ai

Introducing ChatGPT

https://openai.com/blog/chatgpt

Poe – Quora's Chatbot

https://poe.com

Generative AI

https://ai.google/discover/generativeai

Midjourney - A text-to-picture AI

https://www.midjourney.com

DALL-E-2 - A text-to-picture AI

https://openai.com/product/dall-e-2

9. 相關期刊

無

10. 學術誠信

本校堅持所有學術作品均須遵守學術誠信的原則，詳情可參閱學生手冊 (https://www.eduhk.hk/re/student_handbook/tc/Academic-Honesty-And-Copyright.html)。 同學應熟悉有關政策。

11. 其他資料

無

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