



## 教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	人工智慧		學年/學期 Academic Year/Semester		114/1			
課程名稱(英文) Course Name in English	Artifical Intelligence							
科目代碼 Course Code	CSIEM0270	系級 Department & Year	碩士	開課單位 Course-Offering Department	資訊工程學系			
修別 Type	選修 Elective	學分數/時間 Credit(s)/Hour(s)	3.0/3.0					
授課教師 Instructor	/顏士淨							
先修課程 Prerequisite								

## 課程描述 Course Description

本課程將以AlphaGo的技術為主軸，內容為目前搜尋和深度學習等最新的人工智慧技術。透過課堂講授，專案實作與線上課程研討，將使得人工智慧成為一門實用的科學，並且訓練學生自主學習能力。  
This course will focus on the technology of AlphaGo, and the content will be the latest artificial intelligence technologies such as current search and deep learning. Through classroom lectures, project implementation and online course discussions, artificial intelligence will become a practical science and train students' independent learning ability.

## 課程目標 Course Objectives

本課程內容為目前搜尋和機器學習等最新的人工智慧技術。透過課堂講授，專案實作與線上課程研討，將使得人工智慧成為一門實用的科學，並且訓練學生自主學習能力。  
The content of this course covers the latest artificial intelligence technologies such as search and machine learning. Through classroom lectures, project implementation, and online course discussions, this course will make artificial intelligence a practical science and train students to have self-learning abilities.

系專業能力 Basic Learning Outcomes		課程目標與系專業能力相關性 Correlation between Course Objectives and Dept.'s Education Objectives
A	統合資工知識技術之能力Ability to integrate knowledge and technologies of computer science and information engineering.	●
B	設計技術理論驗證實驗之能力Ability to design and conduct science experiments and to validate hypotheses.	●
C	資訊軟硬體設計開發之能力Ability to design and develop computer software and hardware.	●
D	團隊專案開發之能力Ability to design and develop team projects.	●
E	批判性思考與創新研發之能力。Ability of analytical thinking, creative research planning, and innovative development.	●

圖示說明Illustration : ● 高度相關 Highly correlated ○ 中度相關 Moderately correlated

## 授課進度表 Teaching Schedule &amp; Content

週次Week	內容 Subject/Topics	備註Remarks
1	Introduction	
2	Intelligent Agents	

3	Solving problems by searching(1)	
4	Solving problems by searching(2)	
5	Informed search	
6	A* search	
7	Local search	
8	Game tree search	
9	AB Tree Search	
10	exam.	
11	Evolution Algorithms	
12	CSP	
13	Monte Carlo Tree Search	
14	Game Theory	
15	ABS Othello Competition	
16	Presentation	
17	exam.	
18	N/A	

#### 教 學 策 略 Teaching Strategies

課堂講授 Lecture       分組討論 Group Discussion       參觀實習 Field Trip  
 其他Miscellaneous:

#### 教 學 創 新 自 評 Teaching Self-Evaluation

##### 創新教學 (Innovative Teaching)

問題導向學習 (PBL)       團體合作學習 (TBL)       解決導向學習 (SBL)  
 翻轉教室 Flipped Classroom       磨課師 Moocs

##### 社會責任 (Social Responsibility)

在地實踐 Community Practice       產學合作 Industy-Academia Cooperation

##### 跨域合作 (Transdisciplinary Projects)

跨界教學 Transdisciplinary Teaching       跨院系教學 Inter-collegiate Teaching

業師合授 Courses Co-taught with Industry Practitioners

##### 其它 other:

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學期成績計算及多元評量方式 Grading & Assessments

配分項目 Items	配分比例 Percentage	多元評量方式 Assessments						
		測驗 會考	實作 觀察	口頭 發表	專題 研究	創作 展演	卷宗 評量	證照 檢定
平時成績(含出缺席) General Performance (Attendance Record)								
期中考成績 Midterm Exam	20%	✓						
期末考成績 Final Exam	20%	✓						
作業成績 Homework and/or Assignments	30%		✓	✓				
其他 Miscellaneous (Projects)	30%		✓		✓			

評量方式補充說明  
Grading & Assessments Supplemental instructions

教科書與參考書目 (書名、作者、書局、代理商、說明)

Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)

Stuart Russell and Peter Norvig. Artificial Intelligence: A Modern Approach 4/e, Prentice Hall, 2021.  
(新月代理)

課程教材網址(含線上教學資訊,教師個人網址請列位於本校內之網址)

Teaching Aids & Teacher's Website (Including online teaching information.

Personal website can be listed here.)

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其他補充說明 (Supplemental instructions)