



課 綱 Course Outline
資訊工程學系國際組

中文課程名稱 Course Name in Chinese	人工智慧				
英文課程名稱 Course Name in English	Artificial Intelligence				
科目代碼 Course Code	CSIEM0270	班 別 Degree	碩士班 Master' s		
修別 Type	選修 Elective	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite					
課程目標 Course Objectives					
<p>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.</p>					
系教育目標 Dept.' s Education Objectives					
1	探究學科知識，善用專業技能 Explore academic knowledge, utilize professional skills.				
2	訓練評析思考，創新解決問題 Exercise analytical thinking, enhance creative problem solving skills.				
3	學習團隊分工，強化溝通表達 Participate in teamwork, strengthen communication skills.				
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

課程大綱
Course Outline

1. Introduction
2. Intelligent agents
3. Solving problems by searching
4. Informed search
5. Local search
6. Evolution algorithms
7. Constraint satisfaction problem
8. Machine learning
9. Deep learning
10. Game Theory
11. Game tree search
12. Monte Carlo Tree Search

資源需求評估 (師資專長之聘任、儀器設備的配合 . . . 等)
Resources Required (e.g. qualifications and expertise, instrument and equipment, etc.)

師資專長：人工智慧、機器學習

儀器設備：電腦教室

Faculty expertise: Artificial Intelligence, Machine Learning

Equipment: Computer classroom

課程要求和教學方式之建議
Course Requirements and Suggested Teaching Methods

宜採理論與實務並重方式進行。

每一單元均應配合實作課程，以真正了解人工智慧系統的實現。

It is advisable to adopt a balanced approach between theory and practice. Each unit should be accompanied by hands-on practice courses to truly understand the implementation of artificial intelligence systems.

其他
Miscellaneous