

課程資訊 (Course Information)					
科號 Course Number	11220EMIM500600	學分 Credit	3	人數限制 Class Size	30
中文名稱 Course Title	深度學習概論				
英文名稱 Course English Title	Introduction to Deep Learning				
任課教師 Instructor	賴尚宏(LAI, SHANG-HONG) 陳煥宗(CHEN, HWANN-TZONG) 江振國(CHIANG, CHEN-KUO) <u>more information</u>				
上課時間 Time	S2S3S4	上課教室 Room	GEN IV綜四223		

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此科目對應之系 所課程規畫所欲 培養之核心能力 Core capability to be cultivated by this course	
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課程簡述 (Brief course description)

簡介深度學習的技術，包括各種具代表性的深度學習神經網路模型，如何進行模型的訓練，以及其相關的實際應用。另 外，此課程將著重在實作深度學習的模型以及如何達到模型的訓練以解決實際的問題。

課程大綱 (Syllabus)

Course keywords:
人工智慧, 深度學習, 神經網路模型, Artificial Neural Network, Deep Learning, Neural Network Model

●教學方式(Teaching Method)
投影片授課 / 實例示範

● 教學進度(Syllabus)
Week 1: Basics of Machine Learning
Week 2: Artificial Neural Network and backpropagation
Week 3: Convolutional Neural Networks
Week 4: Transformers
Week 5: Deep Learning software frameworks
Week 6: Architecture Design Choices
Week 7: Sample Applications with CNNs
Week 8: Generative Adversarial Networks (GAN)
Week 9: Sample Applications with GAN models
Week 10: Recurrent Neural Network and LSTM
Week 11: Midterm Exam
Week 12: Deep Attention Learning
Week 13: Practical model training techniques
Week 14: Anomaly detection
Week 15: Domain Adaptation
Week 16: Federated learning
Week 17: Smart manufacturing
Week 18: Final project presentation

● 成績考核(Evaluation)
作業、考試、課程專題、課堂參與

● 可連結之網頁位址
<https://eeclass.nthu.edu.tw/>