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②國玄東華大學

教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	演算法AA			學年/學期 Academic Year/Semester		113/2	
課程名稱(英文) Course Name in English	Introduction to Algorithms						
科目代碼 Course Code	EE3364AA	系級 Department 學二 & Year		開課單位 Course-Offering Department	電機工程學系		
修別 Type	學程 Program	學分數/時間 Credit(s)/Hour(s)		3.0/3.0			
授課教師 Instructor	/陳震宇						
先修課程 Prerequisite							

課程描述 Course Description

This course introduces students the concepts, analysis and implementation of computer algorithms. Some important and salient algorithms will be covered in detail for build up students' capability in design an adequate algorithm to properly solve the problem desired.

課程目標 Course Objectives

The students will be familiar with fundamentals of algorithm design and analysis

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

授課進度表 Teaching Schedule & Content

週次Week	內容 Subject/Topics	備註Remarks
1	what is a algorithm?	
2	Background Review: Discrete Mathematics	
3	Asymptotic analysis	
4	computatioal complexity	
5	various approaches: divide and conquer or iterative; serial, distributed or parallel	
6	Recursion and Master Theorem	
7	quick sort and randomized algorithms	
8	elementary graph theory and algorithms	
9	期中考試週 Midterm Exam	
10	advanced graph algorithms: routing	
11	advanced graph algorithms: MST	
12	advanced graph algorithms: flow and cut	
13	greedy and heuristic algorithms	
14	dynamic programming 1	
15	dynamic programming 2	

16	Computational Intelligence algorithms 1							
17	Computational Intelligence algorithms 2, evolutionary algorithms and DNN							
18	期末考試週 Final Exam							
	教學策略 Teaching Strategies							
✓ 課堂講	✓ 課堂講授 Lecture ✓ 分組討論Group Discussion 參觀實習 Field Trip							
其他Mi	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) 解決導向學習(SBL)							
■ 翻轉教室 Flipped Classroom								
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:								

學期成績計算及多元評量方式 Grading & Assessments									
配分項目	配分比例 Percentage	多元評量方式 Assessments							
Items		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	其他
平時成績 General Performance	6%	~	~	~					
期中考成績 Midterm Exam	47%								
期末考成績 Final Exam	47%								
作業成績 Homework and/or Assignments	0%								
其他 Miscellaneous ()									

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.)

Introduction to Algorithms, 4/e

Cormen, Thomas H., Leiserson, Charles E., Rivest, Ronald L.

ISBN: 026204630X

ISBN-13:9780262046305

The MIT PRESS

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.)

東華e學院 NDHU eLearn website.

其他補充說明(Supplemental instructions)