

 國立東華大學
教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	演算法AB			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	EE__3364AB	系級 Department & Year	學二	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	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	Final Exam	

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 Industry-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 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	其他
平時成績(含出缺席) General Performance (Attendance Record)	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)									