Please consult Intellectual Property Rights before making a photocopy. Please use the textbook of copyrighted edition.

②图玄東華大學

教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	柔性計算系統實	務		學年/學期 Academic Year/Semester		114/1	
課程名稱(英文) Course Name in English	Realization of Soft Computing Systems						
科目代碼 Course Code	AIIA50250	系級 Department 碩士 & Year		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	/黄振榮						
先修課程 Prerequisite							

課程描述 Course Description

本課程針對資訊工程系研究生有志於在柔性計算領域發展的學生,建立柔性計算的相關理論基礎與實務,藉以激發學生對柔性計算的興趣並能將其技術應用於未來的工作或研究。課程將包含演講、Weka軟體的操作、個人報告。 This course introduces the concepts and algorithms that are developed in the fields of Soft computing which uses soft computational techniques in machine learning and artificial intelligence to study and model complex phenomena. The course will consist of lectures, Weka demos, and paper reviews.

課程目標 Course Objectives

This course aims to build up the theoretical foundation of soft computing systems for PhD students of the Department of Computer Science & Information Engineering who are interested in developing their career in the field of soft computing systems and to introduce the state-of-art technologies related to soft computing systems in the literature in order to enhance students' innovative and practical skills in the design of soft computing systems.

	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.	•
В	設計技術理論驗證實驗之能力Ability to design and conduct science experiments and to validate hypotheses.	•
С	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.	0
Е	批判性思考與創新研發之能力Ability of analytical thinking, creative research planning, and innovative development.	0

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	Introduction	
2	Machine learning and statistic	
3	Divide-and-conquer: Constructing decision trees	

4	Covering algorithms: Constructing rules						
5	中秋節 Mid-Autumn Festival						
6	Comparing data mining methods						
7	Classification algorithms I						
8	Classification algorithms II						
9	期中考試週 Midterm Exam						
10	Clustering algorithms						
11	Introduction to Weka						
12	The UI of Weka software	The UI of Weka software					
13	Data preprocessing with Weka						
14	Classification with Weka						
15	Clustering with Weka						
16	Result analysis with Weka						
17	期末考試週 Final Exam						
18	Online Weka demo						
	教學策略 Teaching Strategies						
✓ 課堂講	接 Lecture						
 其他Mis	scellaneous:						
	教學創新自評 Teaching Self-Evaluation						
創新教學(我字劇和自新Teaching Self-Evaluation (Innovative Teaching)						
問題導向學習(PBL)							
社會責任(Social Responsibility)							
在地實踐Community Practice							
跨域合作(Transdisciplinary Projects)							
一跨界教學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 多元評量方式 Assessments								
Items	Percentage	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)	30%		~	~					
期中考成績 Midterm Exam	40%	~							
期末考成績 Final Exam	40%	~							
作業成績 Homework and/or Assignments									
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.)

Data Mining: Practical Machine Learning Tools and Techniques. 4th, by Ian Witten, Eibe Frank, Mark Hall, and Christopher Pal, 2016, Morgan Kaufmann, ISBN: 9780128042915

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.)

NDHU e-learn 東華e學苑

其他補充說明(Supplemental instructions)