

 國立東華大學
教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	電力電子實驗			學年/學期 Academic Year/Semester	115/1
課程名稱(英文) Course Name in English	Power Electronics Laboratory				
科目代碼 Course Code	EE__33670	系級 Department & Year	學四	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)		1.0/	
授課教師 Instructor	/謝欣然				
先修課程 Prerequisite	/*電力電子學				
課程描述 Course Description					
Study on experimentation of power electronic converters. It contains Simulink simulations, analysis of solar panels, and power converter control					
課程目標 Course Objectives					
運用電腦模擬與實際硬體電路實驗方式，認識電力電子元件特性、電源轉換器設計、以及電動機驅動電路設計與測試方式。					
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	培育具備工程、應用數學與物理科學等數理知識之基本能力。To cultivate the basic knowledge of engineering, applied mathematics and physics				●
B	培育系統分析、模擬驗證、實作實現之能力。To cultivate the basic ability of analysis, verification and implementation of systems.				●
C	訓練軟體工具使用與硬體實務驗證相互輔助之能力。To train the auxiliary ability between the utilization of software tool and the verification of the hardware practice				●
D	訓練電機本知學能技術與工程實務相互結合運用之能力。To train the integrate ability between professional instinct in learning technique and engineering practice.				●
E	落實專題製作之群體合作與團隊競爭之能力。To fulfill the ability of group cooperation and teamwork competition.				●
F	落實發掘問題、邏輯分析、克服瓶頸與持續學習之能力。To fulfill the ability of question finding, logical analyzing, bottleneck overcoming and continuous learning				●
G	了解學術倫理與智慧財產觀念，掌握產業更迭需求與具備多元專長之能力。To obtain the ability of multi-specialization and to meet the industry demand as well as to have the ability of academic ethics and concept of intellectual property				○
H	了解國內外市場變化，具備基本科技英文閱讀溝通之能力。To understand the change of global market and the have the basic ability of reading and conversation in English.				○
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	課程簡介，評量方式介紹，實驗分組				09/07
2	電腦模擬軟體操作				09/14

3	直流轉換器模擬與穩壓控制(I)	09/21
4	Off-day	09/28
5	直流轉換器模擬與穩壓控制(II)	10/05
6	太陽能板光電特性實驗, short-circuit test, open-circuit test, and efficiency 太陽能板輸出功率特性(I), PV & IV curves	10/12
7	太陽能板輸出功率特性(II), PV & IV curves	10/19
8	Off-day	10/26
9	Suspending due to exam week (期中考試週 Midterm Exam)	11/02
10	太陽能板輸出電壓轉換控制設計(I)	11/09
11	太陽能板輸出電壓轉換控制設計(II)	11/16
12	分組實驗專題(I)	11/23
13	分組實驗專題(Ii)	11/30
14	分組實驗專題(III)	12/07
15	期末專題報告 I	12/14
16	期末專題報告 II	12/21
17	實驗專題分析與討論 I	12/28

彈性 教學 規劃 Flexible Teaching Plan	請勾選(至少需勾選1 個項目): Please tick the box(es). (At least one item is required.): ☒ 問題討論 Problem-based Discussion ☐ 翻轉教學 Flipped Classroom ☐ 展演實作 Performance / Practical Presentation ☐ 校外參訪 Off-campus Visit ☐ 講座活動 Lecture / Seminar ☐ 線上作業 Online Assignments ☐ 自主學習 Self-directed Learning ☐ 課業輔導 Academic Support ☒ 實驗操作 Experiment Operation ☐ 遠距教學(同步) Distance Learning (Synchronous) ☐ 遠距教學(非同步) Distance Learning (Asynchronous) ☐ 其他(請填寫) Others (Please specify.):
	備註: 本校學期週數自115 學年度起調整為17 週, 為符合1學分18 小時之原則, 請教師規劃安排彈性教學。 Note: From the 115th academic year, the semester will be 17 weeks. Please include flexible teaching activities to meet the required 18 hours per credit.

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)	20%								
期中考成績 Midterm Exam									
期末考成績 Final Exam									
作業成績 Homework and/or Assignments									
其他 Miscellaneous (_____)									
評量方式補充說明 Grading & Assessments Supplemental instructions Semester grading: 50%(分組專題), 30%(實驗操作與說明), 20%(平時成績/出缺席)									
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.) Handouts, Lecture Notes									
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.)									
其他補充說明 (Supplemental instructions)									