② 国立東華大學 教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	高等電機控制			學年/學期 Academic Year/Se	113/2				
課程名稱(英文) Course Name in English	Advanced Electric Motor Drives and Control								
科目代碼 Course Code	系級 EE_M0150系級 Department & Year開課單 G士Course-Off Department				電機工程學系				
修別 Type	選修 Elective	選修 Elective 學分數/時間 Credit(s)/Hour(s) 3.0/3.0							
授課教師 Instructor	/謝欣然								
先修課程 Prerequisite									
	課程描述 Course Description								
The objective of this course is about analysis and control of power electronic converters and electric motor drives. Circuits design with power switches and pulse-width modulation techniques is studied, and the proportional-intergarl (PI) controller and advanced control approches will be explored in detail. From this course, students will know about analysis and design of power circuits and controllers for dc and ac motor drives.									
課程目標 Course Objectives									
Electric machines have been the workhorses of industry for many years. Combined with the advanced power electronics, microprocessor technologies and control theories, the electric motor drives have become sophisticated, and make many high-performance industrial applications possible. Therefore, for the graduated students major in electric power and control, the knowledge of the modern technologies of the electric motor drives is necessary.									
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授課進度表 Teaching Schedule & Content						
週次Week	內容 Subject/Topics	備註Remarks				
1	Introduction to semester grading method Introduction to electric machines control	02/19				
2	Study on power electronics: DC-DC converters I	02/26				
3	Study on power electronics: DC-DC converters II	03/05				
4	Study on power electronics: DC-DC converters III	03/12				
5	Study on power electronics: DC-AC converters I	03/19				
6	Study on power electronics: DC-AC converters II	03/26				
7	Study on power electronics: DC-AC converters III	04/02				
8	Oral presentation #1	04/09				
9	DC machines control I	04/16				
10	DC machines control II	04/23				
11	DC machines control III	04/30				
12	Oral presentation #2	05/07				
13	AC machines control I	05/14				
14	AC machines control II	05/21				
15	AC machines control III	05/28				
16	Oral presentation #3	06/04				
17	Special issues on motor drives control I	06/11				
18	Special issues on motor drives control II	06/18				
	教學策略 Teaching Strategies					
 ✓ 課堂講授 Lecture ✓ 分組討論Group Discussion ✓ 参觀實習 Field Trip 其他Miscellaneous: 						
教 學 創 新 自 評 Teaching Self-Evaluation						
教学剧型 Freaching Self Evaluation						
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)						
▲ 全地實踐Community Practice ▲ 産學合作 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 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 General Performance									
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									
Presentation: 30%, 30%, 40%									
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.)									
Power Electronics, by Hart Modern Power Electronics and AC Drives, by B.K. Bose Electric Motor Drives: Modeling, Analysis, and Control, by R. Krishnan									
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)									