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

②國玄東華大學

教學計劃表 Syllabus

TO STITUDES								
課程名稱(中文) Course Name in Chinese	自動控制系統AB				學年/學期 Academic Year/Se	113/1		
課程名稱(英文) Course Name in English	Automatic Control Systems							
科目代碼 Course Code	EE3360AB	系級 Department 學三 (& 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	/蘇仲鵬							
先修課程 Prerequisite								
課程描述 Course Description								

講授 自動控制系統的重要觀念及相關理論,使同學能具備回授控制系統的特性分析、控制器設計、與系統模擬的能力,使應用於包括馬達驅動控制、多軸機器臂運動控制等重要領域。課程內容包括連續時間系統的物理數學模型建立、穩定性分析、動態響應、根軌跡方法、PID控制器設計、頻率響應分析,相位領先、與相位滯後的設計,並介紹系統狀態空間模型與狀態回授的概念與方法。

課程目標 Course Objectives

學習控制系統之穩定度分析、控制器設計方式、以及控制相關軟硬體設備之認識與應用

	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	•
В	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.	•
С	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	0
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.	•
Е	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.	0
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	0
Н	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.	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	控制系統介紹、Laplace transform	

nses

教學策略 Teaching Strategies
✓ 課堂講授 Lecture
其他Miscellaneous: 課堂講授、課後作業、程式模擬
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 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	10%								
期中考成績 Midterm Exam	30%								
期末考成績 Final Exam	30%								
作業成績 Homework and/or Assignments	30%								
其他 Miscellaneous (MATLAB 程式)	10%								

評量方式補充說明

Grading & Assessments Supplemental instructions

控制系統設計需要使用MATLAB,程式作業外加至多10%至總成績

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.)

(1) Hassan K. Khalil

Control Systems: An Introduction, Michigan Publishing, 2023

(2) Norman S. Nise,

Control Systems Engineering

8th Ed., John Wiley & Sons, 2017.

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

其他補充說明(Supplemental instructions)