國立東華大學

教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	數位控制導論AB			學年/學期 Academic Year/Semester	113/2
課程名稱(英文) Course Name in English	Introduction to Digital Control				
科目代碼 Course Code	EE__3350AB	系級 Department & Year	學三	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	/謝欣然				
先修課程 Prerequisite	/*自動控制系統				

課程描述 Course Description

Study on discrete-time or digital control systems. It contains discrete-time signal analysis, modeling of digital control systems, stability of digital control systems, digital control system design, state-space models, and state feedback control design.

課程目標 Course Objectives

This course aims at providing students with an understanding of the most relevant concepts and techniques in digital control system analysis and design.

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	1) Introduction to digital control engineering. 2) Grade evaluation method 3) Notices in studying and classroom	02/18
2	Introduction to control systems technology I	02/25
3	Introduction to digital control technology II Introduction to Z transform I	03/04
4	Introduction to Z transform II	03/11
5	Modeling of digital control systems I	03/18
6	Modeling of digital control systems II Stability of digital control systems I	03/25
7	Stability of digital control systems II	04/01
8	Digital control system design	04/08
9	1st Exam	04/15
10	State-space representation I	04/22
11	State-space representation II	04/29
12	State-space representation III	05/06
13	State feedback control I	05/13
14	2nd Exam (Tentative)	05/20

15	State feedback control II	05/27
16	State feedback control III	06/03
17	3rd Exam (written exam or homework)	06/10
18	Special issues on digital control systems	06/17

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 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 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)	10%								
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: 20%, 30%, 40%, 10%(Attendace)

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.)

Digital Control Engineering: Analysis and Design, Academic Press, Elsevier, 2013.
Authors: M.S. Fadali and A. Visioli
滄海書局代理

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)