國立東華大學

教學計劃表　Syllabus

課程名稱(中文) Course Name in Chinese	應用電子學AA			學年/學期 Academic Year/Semester	113/1
課程名稱(英文) Course Name in English	Applied Electronics				
科目代碼 Course Code	PHYS3250AA	系級 Department & Year	學三	開課單位 Course-Offering Department	物理學系
修別 Type	學程 Program	學分數/時間 Credit(s)/Hour(s)	3.0/3.0		
授課教師 Instructor	/林楚軒				
先修課程 Prerequisite					

課程描述　Course Description

本課程內容包含:
(1) 電子學背景知識（含基礎電路學、半導體物理）。
(2) 常見電子元件（二極體、ＢＪＴ、ＭＯＳＦＥＴ）及電路分析。

課程目標　Course Objectives

建立電子學的基礎與觀念

	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	具備物理之基礎背景知識Possessing fundamental knowledge in physical sciences.	○
B	能運用基本物理知識與邏輯推理，分析解決物理問題Being able to analyze and solve physics problems based on basic knowledge in physics as well as logical reasoning.	●
C	對目前測量器材有基礎認識，且具有操作物理實驗儀器的能力Being acquainted with modern equipment and being able to operate them for performing physics experiments.	●
D	能使用基礎電腦程式語言解決物理問題Being able to use basic computer programming for solving physics problems.	
E	善用各種資訊平台進行論文資料蒐集的能力Being able to use various platforms for data collection benefiting a topical research.	
F	具備科技發展的國際視野以及外語溝通的能力Having an international view of the technology developments and being able to use a foreign language for communications	
G	能整合物理與其它領域知識Being able to integrate the knowledge of physics with that of other fields.	○

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	
2	1. Introduction	
3	2. Physics of semiconductor	
4	2. Physics of semiconductor	

5	2. Physics of semiconductor	
6	老師出國暫停一次，第一週先補課	
7	3.Diode models and circuits	
8	3.Diode models and circuits	
9	4.Bipolar transistors	期中考
10	4.Bipolar transistors	
11	4.Bipolar transistors	
12	5.Bipolar amplifiers	
13	5.Bipolar amplifiers	
14	5.Bipolar amplifiers	
15	5.Bipolar amplifiers	
16	6.Physics of MOS transistors	
17	6.Physics of MOS transistors	期末考
18	6.Physics of MOS transistors(若來得及上完，則改為Razavi影片補充)	

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 General Performance	40%			✓					
期中考成績 Midterm Exam	30%	✓							
期末考成績 Final Exam	30%	✓							
作業成績 Homework and/or Assignments									
其他 Miscellaneous (_____)									

評量方式補充說明
Grading & Assessments Supplemental instructions

上課抽問:40%(有到就有一半分)，考試:60%

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.)

Fundamentals of Microelectronics, Razavi, Third edition, 2020

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.)

https://www.youtube.com/watch?v=yQDfVJzEymI&list=PLiDoPUX9nLkJ8dnPgKoVEOiAb8BfulKRR
課本作者線上教學影片，可充分配合本課程

其他補充說明 (Supplemental instructions)

成績會公佈於東華e學苑
http://www.elearn.ndhu.edu.tw/moodle/