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

課程名稱(中文) Course Name in Chinese	材料電特性分析			學年/學期 Academic Year/Semester		113/1	
課程名稱(英文) Course Name in English	Electrical Cha	aracterizatio	n of Mater	ials			
科目代碼 Course Code	MS21300	系級 Department 學二 & Year		開課單位 Course-Offering Department	材料科學與工程學系		
修別 Type	學程 Program	學分數/時間 Credit(s)/Hour(s)		3.0/3.0			
授課教師 Instructor	/林育賢						
先修課程 Prerequisite							

課程描述 Course Description

Electrical engineering is too vast to cover in one or two courses. Our objective is to introduce the underlying concepts that you are most likely to need. Circuit theory is

the electrical engineer's fundamental tool. That is why the first several chapters of this course are devoted to circuits. Furthermore, electronic devices are also introduced in the last parts of the course.

For engineers and scientists can see how electrical engineering can be applied to their fields,

課程目標 Course Objectives

讓材料系學生瞭解材料分析所需具備之基本電路理論與相關電子儀表及其分析方法。

'H -b Wa ala

This course provides students with an understanding of the basic circuit theory and related electronic instruments and their analytical methods required for materials analysis.

圖示說明Illustration : ● 高度相關 Highly correlated ○中度相關 Moderately correlated

3 P 0 1 1 1 /T .

授課進度表 Teaching Schedule & Content

ND 1

內容 Subject/Topics	備註Remarks
Introduction, Overview of Electrical Engineering	
Circuits, Currents, and Voltages	
Power and Energy Kirchhoff's Current Law Kirchhoff's Voltage Law Introduction to Circuit Elements Introduction to Circuits	
Resistive Circuits (I)	
Resistive Circuits (II)	
Resistive Circuits (III)	
Resistive Circuits (IV)	
Capacitance and Inductance (I)	
期中考試週 Midterm Exam	
Capacitance and Inductance (II)	
Transients (I)	
	Introduction, Overview of Electrical Engineering Circuits, Currents, and Voltages Power and Energy Kirchhoff's Current Law Kirchhoff's Voltage Law Introduction to Circuit Elements Introduction to Circuits Resistive Circuits (I) Resistive Circuits (III) Resistive Circuits (IV) Capacitance and Inductance (I) 期中考試週 Midterm Exam Capacitance and Inductance (III)

12	Transients (II)							
13	Transients (III)							
14	Steady-State Sinusoidal Analysis (I)							
15	Steady-State Sinusoidal Analysis (II)							
16	Diodes							
17	期末考試週 Final Exam							
18	教師彈性補充教學							
教 學 策 略 Teaching Strategies								
✓ 課堂講授 Lecture								
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								
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	r: 							

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	30%								
期中考成績 Midterm Exam	25%								
期末考成績 Final Exam	35%								
作業成績 Homework and/or Assignments	5%								
其他 Miscellaneous (Classroom Attendance)	5%								

評量方式補充說明

Grading & Assessments Supplemental instructions

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.)

Title: Electrical Engineering

Principles and Applications

Author: Allan R. Hambley

Pearson Education Limited

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.)

其他補充治明	(Sunnlemental	instructions)	
40 101/1H /1 10/1 7/1	Couppremental	i inotiuctiono/	