



教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	電路學		學年/學期 Academic Year/Semester	113/2	
課程名稱(英文) Course Name in English	Basic engineering circuit analysis				
科目代碼 Course Code	OE_10380	系級 Department & Year	學一	開課單位 Course-Offering Department	光電工程學系
修別 Type	學程 Program	學分數/時間 Credit(s)/Hour(s)	3.0/3.0		
授課教師 Instructor	/林伯彥				
先修課程 Prerequisite					

課程描述 Course Description

電路學(一)的課程內容:主要建立電路學的基本觀念與了解重要的電路原理與其分析方法，此課程特別著重於直流電路的分析方法，包含了由被動元件(電阻、電容與電感)、主動元件(運算放大器)與其所構成的一、二階網路，並作為修習電路學(二)之基礎。

課程目標 Course Objectives

讓學生瞭解基本電路理論與分析方法。

	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	具有光電相關的物理、化學、材料及數學的知識。Physics, chemistry, material, and math knowledge related to opto-electronic engineering	●
B	具有光電工程的專業知識及應用能力。Professional knowledge and application ability of opto-electronic engineering	●
C	具有設計與執行實驗、報告撰寫與數據解釋之能力。Abilities to design and execute experiment, write reports, and explain data	○
D	使用儀器進行物件的分析及測試。Analysis and test of devices by instruments	○
E	具備適當的英文能力，應用於學習與交流。English language ability to study and interact	○
F	具有良好的溝通與團隊合作的能力。Ability to communicate and teamwork	○
G	具有創新思維及終身學習的能力。Creative thinking and life-long learning ability	○

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	課程介紹	
2	Introduction: Basic Concepts	
3	Basic Laws (I)	
4	Basic Laws (II)	

5	Methods of Analysis (I)	
6	Methods of Analysis (II)	
7	Circuit Theorems (I)	
8	Circuit Theorems (II)	
9	期中考試週 Midterm Exam	
10	Operational Amplifiers (I)	
11	Operational Amplifiers (II)	
12	Capacitors and Inductors	
13	Capacitors and Inductors	
14	First-Order Circuits (I)	
15	First-Order Circuits (II)	
16	Second-Order Circuits (I)	
17	Second-Order Circuits (II)	
18	期末考試週 Final Exam	

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 Industry-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

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.)

Textbooks:

1. Susan Riedel and James W. Nilsson, Electric Circuits, 11th Edition, Pearson, 2020. (滄海代理)

References:

1. James A. Svoboda and Richard C. Dorf, Introduction to Electric Circuits, 9th Edition, John Wiley & Sons, Singapore, 2018. (滄海代理)

2. Charles K. Alexander and Matthew N.O. Sadiku, Fundamentals of Electric Circuits, 7th Edition, McGraw-Hill Education, NY, 2021 (東華書局代理) ISBN13 : 9781260570793

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)

課程進度內容依實際上課狀況作滾動式調整。