國立東華大學

課　　綱　Course Outline

資訊工程學系資工組

中文課程名稱 Course Name in Chinese	電子電路學				
英文課程名稱 Course Name in English	Electric and Electronic Circuits				
科目代碼 Course Code	CSIE20200	班 別 Degree	學士班 Bachelor’s		
修別 Type	學程 Program	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite					

課程目標
Course Objectives

1. 電子電路基本定理分析
2. 計算機應用技術分析
3. 培育計算機硬體研發人才

系教育目標
Dept.’s Education Objectives

1	具備學科知識、養成專業技能 Acquire academic knowledge, develop professional skills
2	學習創新思考，分析解決問 Inspire innovative thinking, increase analytical problem solving ability
3	培養團隊精神，學習溝通合作 Promote teamw ork spirit, encourage coordination and cooperation
4	提昇專業倫理、承擔社會責任 Sublimate professional ethics, engage social responsibility
5	涵育人文素養、開拓國際視野 Cultivate humanities, broaden global perspective

	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	資訊專業終身學習能力 Ability of lifetime learning in information profession	●
B	實驗驗證資訊科學能力 Ability of validate experimental result validation in information science field	○

C	資訊工具整合運用能力 Ability of integrated applications of information technology	○
D	資訊系統應用設計開發能力 Ability of information application system design and development	
E	團隊合作溝通協調能力 Ability of teamwork, communication, and coordination	●
F	資通訊科技問題解決能力 Ability of problem solving regarding information and communication technolog	
G	瞭解資訊科技多元影響能力 Ability to understand information technology’s multiple influences	
H	肩負資訊人社會責任能力 Ability of bearing the social responsibilities being among information professionals	

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

課程大綱
Course Outline

1. Fundamentals
 - RLC circuit, Fourier analysis, Laplace transform technique
2. Theory Analysis
 - Thevenin’s & Norton’s theorem, Forced response, Phasor concept
3. Components Analysis
 - Semiconductor, diodes, transistors, MOSFETs, CMOS
4. Logic Circuit Analysis
 - CMOS inverters, Combinatorial digital circuit
5. Introduction to VLSI system

資源需求評估（師資專長之聘任、儀器設備的配合・・・等）
Resources Required (e.g. qualifications and expertise, instrument and equipment, etc.)

1. 電腦教室與計算機硬體相關實驗室
2. 電子電路模擬軟體（PSPICE）

課程要求和教學方式之建議
Course Requirements and Suggested Teaching Methods

1. 教學要求:
 A. 期中考；B. 隨堂考；C.期末考；D.課後作業
2. 進行方式
 A. 教師授課 B. 上機實習：修習者藉相關電子電路設備及PSPICE軟體進行實務分析

其他
Miscellaneous