106 學年第 1 學期 類比積體電路導論 Introduction to Analog Integrated Circuits 課程綱要

課程名稱：（中文）類比積體電路導論 （英文）Introduction to Analog Integrated Circuits				開課單位	電機系
				永久課號	UEE3404
授課教師： 趙昌博					
學分數	3	必/選修	選修	開課年級	3
先修科目或先備能力： 電子學(一)(二)					
課程概述與目標： Introduction on the basic analog integrated circuits					
教科書（請註明書名、作者、出版社、出版年等資訊）	Sedra & Smith, “Microelectronic Circuits”, Sixth edition, Oxford, NY				

課程大綱		分配時數				備註
單元主題	內容綱要	講授	示範	習作	其他	
Chapter 10	Operational Amplifier Circuits	12				
Chapter 11	Filters and Tuned Amplifiers	12				
Chapter 12	Signal Generators and Waveform-Shaping Circuits	12				
Chapter 13	Output Stages and Power Amplifiers	12				

教學要點概述：

1.學期作業、考試、評量
Homework 20%
Midterm 40%
Final 40%
(採「百分」方式評分)

2.教學方法及教學相關配合事項(如助教、網站或圖書及資料庫等)

	排定時間	地點	連絡方式
師生晤談	16:30 - 18:30, each Monday	EE 735	Email: pchao@mail.nctu.edu.tw Phone: (03) 5131377

每週進度表

週次	上課日期	課程進度、內容、主題
1	9/11 9/14	Ch10　Operational Amplifier Circuits 1.Two-Stage Op Amp 2.Folded-Cascode Op Amp
2	9/18 9/21	Ch10　Operational Amplifier Circuits 1.Op Amp DC Analysis 2.Op Amp Small-Signal Analysis
3	9/25 9/28	Ch10　Operational Amplifier Circuits Op Amp:Gain, Frequency Response, and Slew Rate Introduction of HSPICE tool
4	10/2 10/5	Ch11　Filters and Tuned Amplifiers 1.Filter Transmission, Types, Transfer Function 2.First-Order and Second-Order Filter Functions
5	10/12	Ch11　Filters and Tuned Amplifiers Butterworth and Chebyshev Filters
6	10/16 10/19	Ch11　Filters and Tuned Amplifiers First-Order and Second-Order Filter Functions
7	10/23 10/26	Ch11　Filters and Tuned Amplifiers 1.Second-Order LCR Resonator 2.Second-Order Active Filters Based on the Two-Integrator-Loop Topology
8	10/30 11/2	Ch11　Filters and Tuned Amplifiers 1.Single-Amplifier Biquadratic Active Filters 2.Switched-Capacitor Filters
9	11/6 11/9	Midterm
10	11/13 11/16	Ch11　Filters and Tuned Amplifiers Tuned Amplifiers
11	11/20 11/23	Ch12　Signal Generators and Waveform-1.Shaping Circuits 2.Basic Principles of Sinusoidal Oscillators
12	11/27 11/30	Ch12　Signal Generators and Waveform-1.Shaping Circuits 2.Op Amp-RC Oscillator Circuits
13	12/4 12/7	Ch12　Signal Generators and Waveform-Shaping Circuits 1.LC and Crystal Oscillators 2.Bistable Multivibrators

14	12/11 12/14	Ch12　Signal Generators and Waveform-Shaping Circuits 1.Generation of Square and Triangular Waveforms Using Astable Multivibrators 2.Generation of a Standardized Pulse—The Monostable Multivibrator
15	12/18 12/21	Ch12　Signal Generators and Waveform-Shaping Circuits 1.Nonlinear Waveform-Shaping Circuits 2.Precision Rectifier Circuits
16	12/25 12/28	Ch13　Output Stages and Power Amplifiers 1.Classification of Output Stages 2.Class A,B,AB Output Stage
17	1/4	Ch13　Output Stages and Power Amplifiers 1.Power Amplifiers 2.MOS Power Transistors
18	1/8 1/11	Final exam

※ 請同學遵守智慧財產權觀念及勿使用不法影印教科書。

備註：

1. 其他欄包含參訪、專題演講等活動。
2. 請同學遵守智慧財產權觀念及勿使用不法影印教科書。

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