2309 EIE340 Course Outline

Subject Code	:	EIE340
Subject Title	:	ANALOG CIRCUITS
Level	:	3
Credits	:	3
Teaching Activity	:	Lecture 45 hours
Prerequisite	:	MA101/102: Calculus I/II, PH101/002:Physics I/II, EIE240/241

Class Schedule :

Class	Time		Classroom	Date
D1	MON.	12:30-15:20	C507	2023/09/01 - 2023/12/14

Instructor	:	Dr. Xiaodong Li
Contact Number	:	(853)8897 2195
Email Address	:	xdli@must.edu.mo
Office	:	A214
Office hours	:	Monday 09:30-12:00 Wednesday 14:30-17:30 Tuesday 09:30-12:00 Thursday 15:30-17:30

Course Description

This course aims to provide students a comprehensive understanding of analog electronic circuit and devices. The main content includes: the physical models of electronic device and the analysis method of diode, BJT and MOSFET circuits; the principle of amplification and different amplifier circuit using BJT and MOSFET; the principle and analysis method of operational amplifier, and its applications in signal manipulation.

Textbook(s)

Book name：Microelectronic Circuit Analysis and Design
Author/Editor：Donald Neamen
Edition：4

ISBN：9780071289474
Publisher：McGraw-Hill
Date：2010

INTENDED LEARNING OUTCOMES

Upon successful completion of this subject, students will be able to:
1. understand principle of semiconductor, the development history and trend of different semiconductor devices
2. analyze diode-based circuit, and be familiar with the applications of diodes, such as rectifier, clipper/clamping circuit
3. analyze BJT-based signal amplifier using small-signal model
4. analyze MOSFET-based signal amplifier using small-signal model
5. analyze operation amplifier circuits and be familiar with commonly-used mathematical operation with operation amplifier

Schedule

Item	**Topic**	**Hours**	**Teaching Method**
1	Semiconductor Materials and Diodes	4	lecture
2	Diode Circuits	6	lecture
3	The Field-Effect Transistor	4	lecture
4	Basic FET Amplifiers	9	lecture
5	The Bipolar Junction Transistor	4	lecture
6	Basic BJT Amplifiers	9	lecture
7	The Ideal Operational Amplifier and applications	9	lecture

ASSESSMENT APPROACH

Assessment method	Percentage %
1. Mid-term exam I	20
2. Mid-term exam II	20
3. Class participation	10
4. Final exam	50
Total	100 %

Guideline for Letter Grade:

Marks	Grade	GPA

94-100	A+	4
90-93	A	4
83-89	A-	3.7
75-82	B+	3.3
68-74	B	3.0
63-67	B-	2.7
59-62	C+	2.3
56-58	C	2.0
54-55	C-	1.7
52-53	D+	1.3
50-51	D	1.0
Below 50	F	n/a

Notes:

Students will be assessed on the basis of continuous assessment (i.e. two midterm exam and class performance) and by an end of semester examination.
The coursework assessment items evaluate students' ability to apply concepts, to construct knowledge and skills in analysing.