



UNIVERSITI SAINS MALAYSIA

EEE 241
ANALOG ELECTRONICS 1
Lecture 1 - Introduction

DR NORLAILI MOHD NOH

Lecturers:

Dr. Norlaili Mohd. Noh
Mr Zulfiqar Ali Abd. Aziz

Part 1

Part 2



Text Book of Part 1:

Gray, Hurst, Lewis and Meyer. Analysis and Design of Analog Integrated Circuits, Fourth Edition. Wiley, 2001.

Reference Book of Part 1:

Sedra and Smith. Microelectronic Circuits, Fifth Edition. Oxford, 2004.

COURSE DESCRIPTION

Fundamental and analysis of analog circuits. The fundamental components in the analog circuits are the transistors. Transistors are used in amplifier circuits. The first part of the course covers the single-stage and multi-stage amplifiers.

PROGRAM OUTCOMES

PO1- Ability to apply knowledge of mathematics and science in Electrical and Electronic Engineering

PO2 - Ability to use current techniques, skills and engineering tools necessary for solving Electrical and Electronic Engineering problems

PO3 - Ability to design and develop an Electrical and Electronic Engineering System in fulfilling desired needs within practical constraints.

PO5 - Ability to identify, analyze, formulate, and solve Electrical and Electronic Engineering problems both efficiently and economically.

The objectives of Part 1 of this course can be stated as follows:

- (i) Analysis of single stage amplifiers.
- (ii) Analysis of multi stage amplifiers.

Learning Outcomes Part 1:

- Students will know the types and analysis of single-stage amplifier circuits .
- Students will know the types and analysis of multi-stage amplifier circuits.

Course Evaluation:

| | |
|------------------------------|-----|
| Part 1 1 Test + 1 Assignment | 15% |
| Part 2 | 15% |
| Final Exam | 70% |

Syllabus and Schedule Part 1



16/7/10

Week 1

1. Single-transistor (single-stage) Amplifiers

Two-port Modeling of Amplifiers

Single-transistor amplifier stages

CE configuration

(1 hr)

19/7/10 and 23/7/10

Week 2

CS configuration

(1 hr)

CB configuration

(1 hr)

CG configuration

(1 hr)

26/7/09 and 30/7/09

Week 3

CC configuration

(1 hr)

CD configuration

(1 hr)

CE amplifier with emitter degeneration

(1 hr)

Syllabus and Schedule Part 1 - continued

2/8/10 and 6/8/10

CS amplifier with source degeneration
Lecture review



(1 hr)
(2 hrs)

2. Multi-transistors (multi-stage) Amplifiers

9/8/10 and 13/8/10

CC-CE
CC-CC
Test 1

Week 5

(1 hr)
(1 hr)
(1 hr)

16/8/10 and 20/8/10

Darlington
Bipolar Cascode
MOSFET Cascode

Week 6

(1 hr)
(1 hr)
(1 hr)

23/8/10 and 27/8/10

Bipolar Cascade
MOSFET Cascade
Lecture review
Holiday (Nuzul Al-Quran)

30/8/10 and 29/10/10

Mr Zulfiqar's lectures
Semester break

30/10/10 and 7/11/10

Revision week

8/11/10 and 26/11/10

Examination

27/11/10 and 26/12/10

Holiday between semesters

Week 7



(1 hr)
(1 hr)
25/8/10 (Wed - 2 hrs)
27/8/10 (Fri)

Week 8 – 14

4/9/10 – 19/9/10
(10/9/10 - 13/9/10 Aidilfitri)