Course Syllabus

Course Information
CE/EE 3311 Electronic Circuits, Fall 2016
Monday and Wednesday 1:00-2:15 PM
JSOM 11.210

Professor Contact Information
Instructor: Kenneth K. O
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Office hours: Tuesday 4:30-5:30 PM, Friday 3:00 – 4:00 PM or by appointment, ECSN 3.302

Teaching Assistant Contact Information
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Office hours: Wednesday 11:00 AM-12:00PM, Thursday 10:00-11:00AM, ECSN 4.324

Course Pre-requisites: CE/EE3310
Co-requisites: CE/EE3111

Course Description

Large-signal and small-signal characteristics of p-n diodes, BJT and MOSFET transistors. Analysis of circuits containing diodes. Analysis of DC and small-signal characteristics of single-stage BJT and MOSFET amplifiers. Analysis of circuits with operational amplifier as a black box. Differential amplifiers. Introduction of high-frequency models of BJT and MOSFET transistors and methods to analyze amplifier frequency responses.

Student Learning Objectives/Outcomes

1. Ability to understand large signal and small signal characteristics of diodes and analyze circuits containing diodes.
2. Ability to understand large signal and small signal characteristics of Bipolar transistors and analyze single-stage Bipolar transistor amplifiers.
3. Ability to understand large signal and small signal characteristics of MOS transistors and analyze single-stage MOS transistor amplifiers.
4. Ability to analyze circuits with operational amplifier as a black box.
5. Ability to understand high-frequency transistor models and methods to analyze amplifier frequency responses.

Preliminary Outline

Week	Topics
Aug. 22nd	**Introduction (Chapter 1), p-n Junction Review (Chapter 2)**
Aug. 29th	**Ideal Diode Circuits (Chapter 3.1), p-n Junction as Diode (Chapter 3.2 & 3.3)**
Sep. 5th	**Large Signal and Small Signal Operation and Models of p-n Diodes (Chapter 3.4), Diode Circuits (Chapter 3.5)**
Sep. 12th	**Diode Circuits (Chapter 3.5), Bipolar Junction Transistor (BJT) Introduction and Operation (Chapter 4.1-4.3)**
Sep. 19th	**BJT Large Signal Characteristics and Model (Chapter 4.4-4.6), BJT Small Signal Model (Chapter 4.4)**
Sep. 26th	**BJT Small Signal Model (Chapter 4.6), Introduction of BJT Amplifiers and DC Biasing for BJT Amplifiers (Chapter 5.1, 5.2)**
Oct. 3rd	**DC Biasing for BJT Amplifiers (Chapter 5.2), BJT Amplifiers (Common Emitter (Chapter 5.3.1))**
Oct. 10th	**BJT Amplifiers (Common Emitter (Chapter 5.3.1)), Common Emitter with Emitter Degeneration ((Chapter 5.3.1))**
Oct. 17th	**Midterm, BJT Amplifiers (Common Base (Chapter 5.3.2))**
Oct. 24th	**BJT Amplifiers (Emitter Follower (Chapter 5.3.3)), MOS Transistor Introduction and Operation (Chapter 6.1, 6.2)**
Oct. 31st	**MOS Transistor Model (Chapter 6.3), MOS Amplifier DC Biasing (Chapter 7.1)**
Nov. 7th	**MOS Amplifier (Chapter 7.2-7.6), Operational Amplifier Circuits (Chapter 8.1-8.3)**
Nov. 14th	**Non-idealities of Operation Amplifier (Chapter 8.4)**
Nov. 21st	**Fall Break**
Nov. 28th	**Frequency Response (Chapter 11.1-11.2), Frequency Response (Chapter 11.3-11.4)**
Dec. 5th	**Differential Amplifiers (Chapter 10.1-10.2), Differential Amplifiers (Chapter 10.5, 10.6)**

Required Textbooks and Materials

Fundamentals of Microelectronics 2nd Edition by Behzad Razavi, ISBN 978-1-118-15632-2, Wiley



E-book: ISBN 978-1-118-55960-4

Suggested Texts, Readings & Materials

Handouts from the class

Microelectronic Circuits, Sedra and Smith, Oxford. (4th, 5th, or 6th Editions)

Computer Software

Assignments & Academic Calendar

Midterm:	Oct. 17th	1:00 PM – 2:15 PM
Final:	TBA	

Grading Policy

Weekly Homework:	20%
Weekly 10 minute Quizzes: (1:00 PM on Wednesdays)	25% (2-drops are allowed, No make-up Quizzes)
Midterm:	25%
Final:	30%

Weekly Quizzes will be based on weekly homework assignments.

Course & Instructor Policies

1. Class attendance is highly recommended.
2. Assignments are due at the beginning of the class on the due date.
3. Collaborative learning without copying among students is highly recommended.

Technical Support

If you experience any problems with your UTD account you may send an email to:

assist@utdallas.edu or call the UTD Computer Helpdesk at 972-883-2911.

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.