EE2EI4

Electronic Devices and Circuits-An Introduction

Dr. Mohamed Bakr

CRL 224, ext. 24079

mbakr@mail.ece.mcmaster.ca

Info About Myself

B.Sc. in Electronics and Communication Engineering, Cairo University, Cairo, Egypt with Distinction (honors), 1992

M.Sc. in Engineering Mathematics (Optimization), Cairo University, 1996

Ph.D. in Computer Aided Design (CAD) of Microwave Circuits, McMaster University, 2000

P.Eng., Ontario, 2003

CoAuthor of over 52 Journal and Conference papers

Info About Myself (Cont'd)

Research Areas: Optimization methods, computer-aided design and modeling of microwave circuits, neural networks applications, smart analysis of microwave circuits and efficient optimization using time/frequency domain simulation methods.

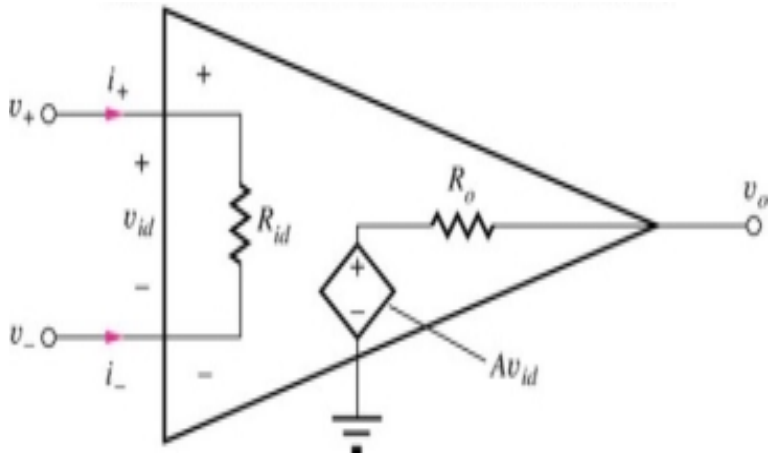
Awards/Scholarships: Ontario Graduate Scholarship (OGS) 1998-2000, NSERC PostDoctoral Fellowship 2000-2001 and Premier's Research Excellence Award (PREA) 2003.

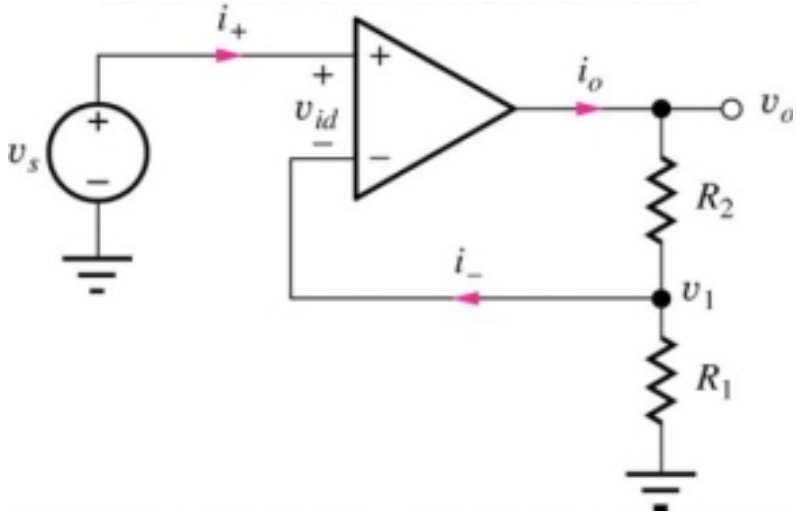
Supervisor/Co-supervisor to a number of graduate students.

Course Overview

Introduction to Electronics

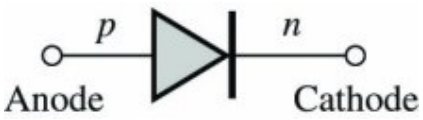
Analog Systems

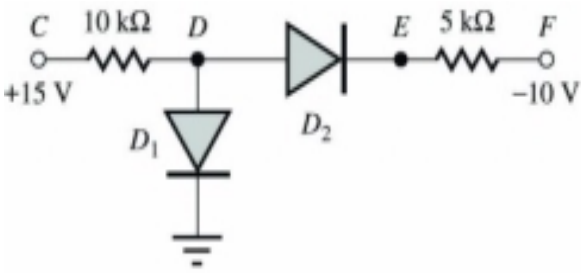


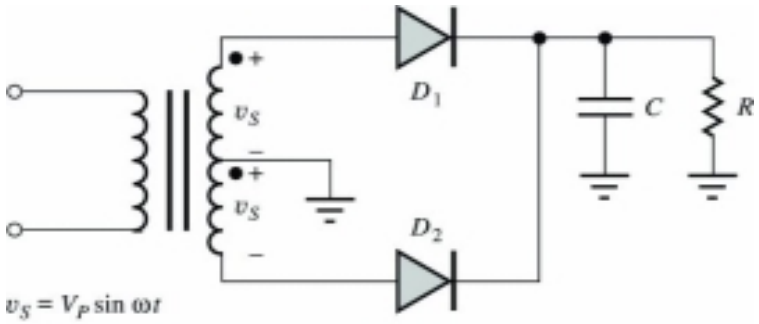


Operational Amplifiers

Course Overview (Cont'd)



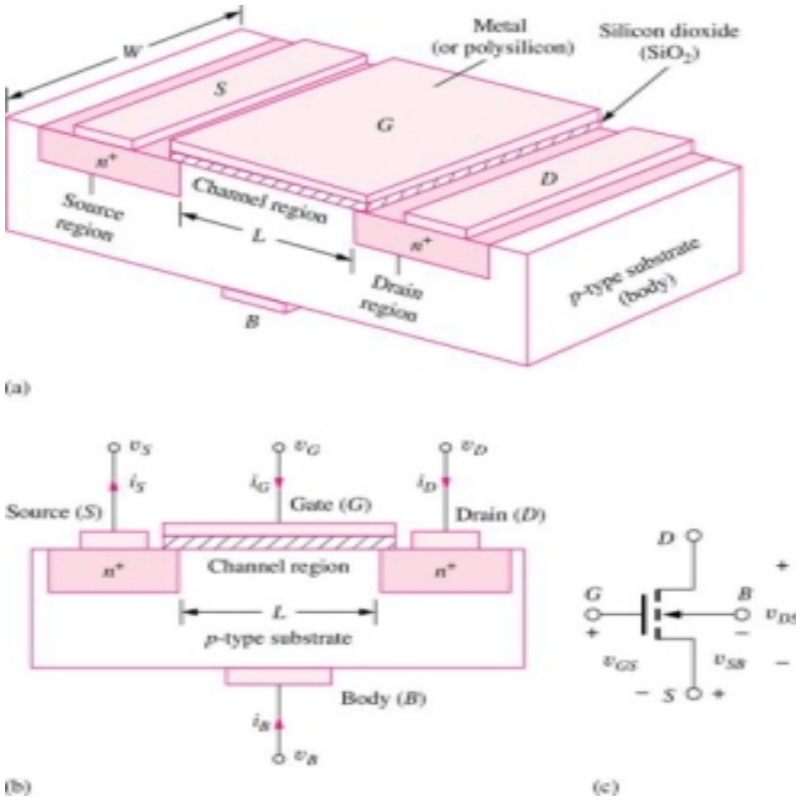




Solid-State Diodes and Diode Circuits

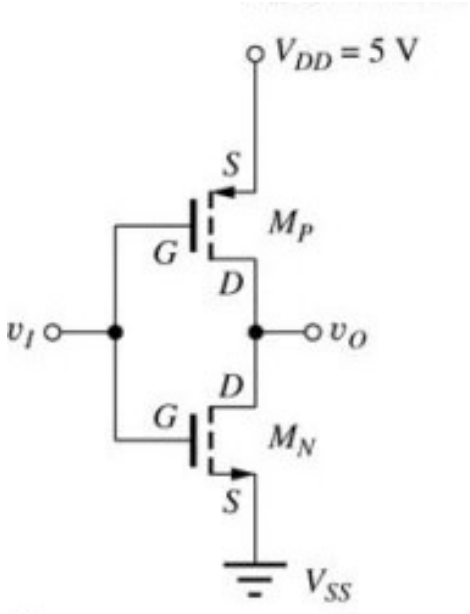
Course Overview (Cont'd)

Solid-State Electronics



Field-Effect Transistors

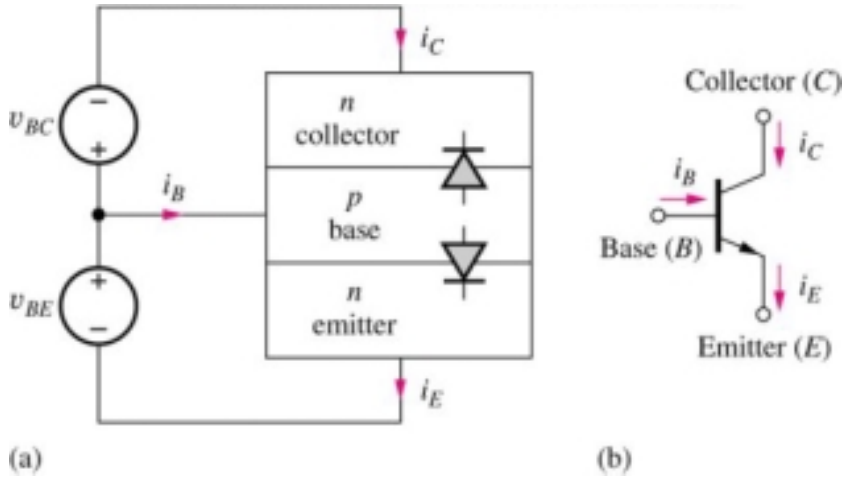
Course Overview (Cont'd)



CMOS Logic Design

Small-Signal Modeling and Linear Amplification - FETs

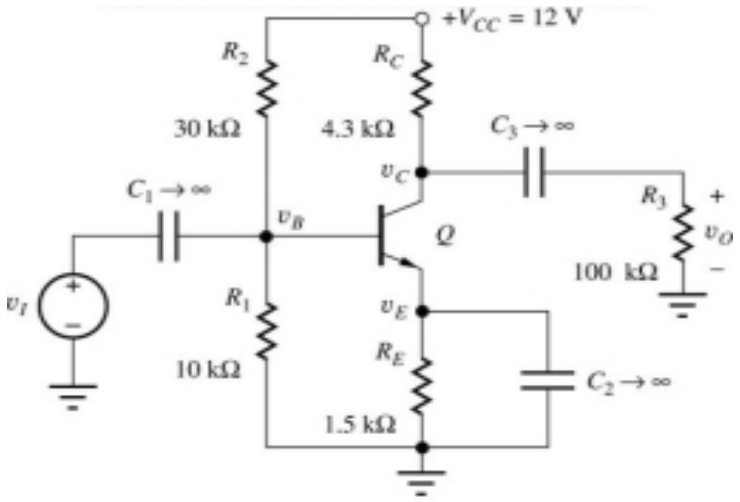
Course Overview (Cont'd)

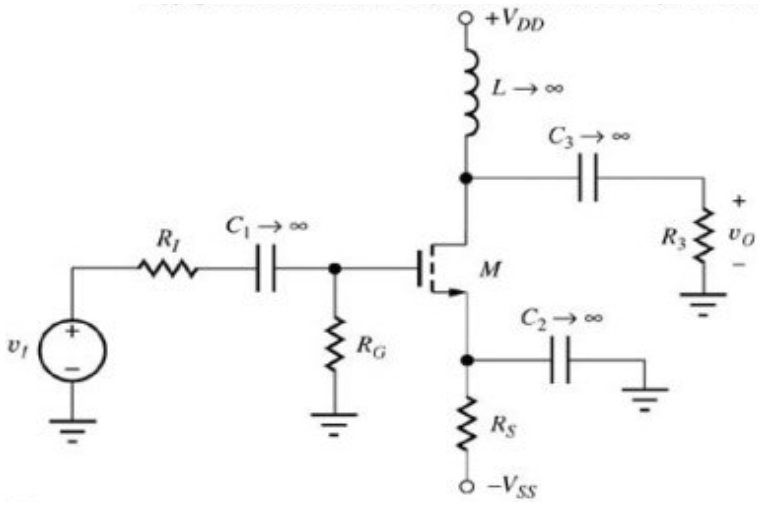


Bipolar Junction Transistors

Small-Signal Modeling and Linear Amplification - BJTs

Course Overview (Cont'd)





Single-Transistor Amplifiers

Course Overview (Cont'd)

TEXT: Main text Book: Microelectronic Circuit Design - R.C. Jaeger and T.N. Blalock, McGraw-Hill, NY, 2004, second edition.
Other text books: Introduction to Electronic Circuit Design – R.A. Spencer and M.S. Ghausi, Pearson Education, Inc., 2003.

CLASSES: Monday, 8:30am-9:20am, T29-101,
Wednesday, 8:30am-9:20am, T29- 101,
Friday, 10:30am-11:20am, T29-101.

TUTORIALS: Tuesday, 9:30am-10:20am, PC-155, Thursday 1:30pm-2:20pm, PC-155.

OFFICE HRS: 1 hour after classes, or at mutually convenient times.

LABORATORIES: Labs start on week of January 19th, 2004. Each lab runs for two weeks

Quizzes/Grading

4	**Quizzes**	**20%**
5	**Labs**	**15%**
	Lab Test	**10%**
	PSpice Project	**5%**
	Final Examination	**50%**

HomeWork Problems are not marked. They help in strengthening your understanding of the subject. Solutions are to be posted by the end of the week.

The prelab is worth 33% of the lab mark. It will help you prepare for the lab test.

Final examination will be based on all the previous quizzes, tutorials, homework problems and the lab test.

What is New?

PSpice computer simulations are included for the first time. One or two tutorials will be given to familiarize you with PSpice. A 5% PSpice project is included at the end of the course.

I will be giving all the tutorials. Different problems will be covered in each tutorial. You are required to attend both! (?)

Unannounced end-of-lecture 5-minute quiz is to be carried out from time to time. No one is penalized for failing such a test. Helps to give extra marks for the students who perform well in these quizzes.

Optional tutorial?

A Lab experiment is discussed in the tutorial before the start of its assigned week

General Notes

Always be in class before the start time!

Use your McMaster email address. Expect a response within 48 hours.

Lecture material is posted at least 24 hours before lecture time at **http://www.ece.mcmaster.ca/faculty/bakr/ece2ei4/ECE2EI4_Main_2004.htm**

Lab material is posted one week perior to start of the new experiment.

All quizzes, the Lab test and the final examination are multiple choice.

You may call me Mohamed or simply Dr. Bakr

Others

After one month we will have an early course evaluation organized by the Center for Leadership in Learning (CLL).

A summer student is needed to develop a web-based library of PSpice problems for 2EI4.