

EE2CI5

Introduction To Electrical Engineering

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**[http://www.ece.mcmaster.ca/faculty/bakr/
ece2CI5/ECE2CI5_Main_2007.htm](http://www.ece.mcmaster.ca/faculty/bakr/ece2CI5/ECE2CI5_Main_2007.htm)**

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

Author/CoAuthor of over 95 Journal and Conference papers

Info About Myself (Cont'd)

Research Areas: Optimization methods, computer-aided design and modeling of microwave circuits, neural networks applications, computational electromagnetics, CAD of Photonics Devices, Bioelectromagnetism

Awards/Scholarships:

TRIO Student Internship in OSA, inc. 1997

Ontario Graduate Scholarship (OGS) 1998-2000,

NSERC PostDoctoral Fellowship 2000-2001,

Premier's Research Excellence Award (PREA) 2003-

McMaster Tenure/Associate Professor 2007

Supervisor/Co-supervisor to a number of graduate students

Teaching Experience

Teaching Assistant in Engineering Mathematics (Cairo University), 1992-1996

Teaching Assistant in Electrical Engineering (McMaster University) 1996-1999

Assistant Professor in the Department of Electrical and Computer Engineering, McMaster University from 2002-2007

EE 750 Advanced Engineering Electromagnetics

ECE 2EI4 Electronic Devices and Circuits

ECE 3TP4 Signals and Systems

ECE 758 Numerical Techniques in Electromagnetics

ECE 2EI5 Electronic Devices and Circuits,

ECE 3FI4 Theory and Applications in Electromagnetics

Teaching Experience (Cont'd)

ECE 2FH3 Electromagnetics I

ECE 3FK4 Electromagnetics II

Associate Professor Since July 2007

Course Overview

Sept. 7th Introduction to EE2CI5

Sept. 11th Ohm's Law

Sept. 12th Kirchhoff's Laws

Sept. 14th Single Loop Circuits

Sept. 18th Single Node-Pair Circuits

Sept. 19th Series and Parallel Resistor Combinations and Their Circuits

Sept. 21st Circuit with Dependent Sources

Sept. 25th Nodal Analysis

Sept. 26th Nodal Analysis (Cont'd)

Sept. 28th Loop Analysis

Course Overview (Cont'd)

- Oct. 2nd Loop Analysis (Cont'd)
- Oct. 3rd Superposition
- Oct. 5th Thevenin's Theorem
- Oct. 9th Norton's Theorem
- Oct. 10th Maximum Power Transfer
- Oct. 12th Capacitors
- Oct. 16th Inductors
- Oct. 17th LC and RC Circuits
- Oct. 19th First Order Circuits
- Oct. 23rd First Order Circuits (Cont'd)
- Oct. 24th Second Order Circuits

Course Overview (Cont'd)

Oct. 26th Second Order Circuits (Cont'd)

Oct. 31st Review of Complex Analysis

Nov. 2nd Review of Complex Analysis (Cont'd)

Nov. 6th Sinusoids and Complex Forcing Functions

Nov. 7th Phasors and Their Applications in Circuits

Nov. 9th Impedances, Admittances and Phasor Diagram

Nov. 13th Analysis Techniques of AC Circuits

Nov. 14th Instantaneous Power, Average Power, and Maximum Average Power Transfer

Nov. 16th RMS Value, Power Factor, Complex Power and Power Factor Correction

Course Overview (Cont'd)

Text: J. David Irwin and R. Mark Nelms, "Basic Engineering Circuit Analysis", J. Wiley and Sons, 8th edition.

Note: Keep your receipt to get an access card for the Wiley Plus service

Courseware:

EE2CI5 Courseware on Complex Analysis

CLASSES: Tuesday, 9:30 am - 10:20 am, CNH B107
Wednesday, 9:30 am - 10:20 am, CNH B107,
Friday, 9:30 am - 10:20 am, CNH B107

Course Overview (Cont'd)

TUTORIALS: Tuesday 12:30 pm - 1:20 pm, TSH B105

Tutorials start on Tuesday September 20th.

Office Hrs: 1 hour after classes.

Labs: Labs start on week of September 24th. Each lab runs for two weeks. They take place in ITB A114

Lab 1: Introduction to Instrumentation [Part 1](#) and [Part 2](#)
(September 24th - October 5th)

Lab 2: [Resistive Circuits](#) (October 8th - October 19th)

Lab 3: [RC and RL Circuits](#) (October 22nd - November 2nd)

Lab 4: [RLC Circuits](#) (November 5th - November 16th)

Lab 5: [AC Circuits](#) (November 19th - November 30th)

Quizzes/Grading

1	Midterm	25%
5	Labs	20%
5	quizzes	15%
	Final Examination	40%

Midterms take place on Tuesday October 30th, 2007 @ 6:30 pm- 8:30 pm, Room(s): TBA

Quizzes/Grading (Cont'd)

Quizzes will take place every other week during the tutorial time. You must attend the lectures and tutorials with your group.

Students must pass the combined midterm/exam component separately to get a pass in the course. A grade of 50% in this combination must be attained to pass.

Homework problems are not marked. They help in strengthening your understanding of the subject. Solutions of textbook problems are posted on the webpage.

Final examination will be based on lecture examples, tutorials, homework problems, and laboratory experiments

What is New?

Very friendly and easy-to-read textbook

Solutions of all textbook problems posted

Good number of examples in lectures and tutorials

Laboratory-related questions in the midterm and final

My slides will be posted one day before the lectures (No Examples). Copy only examples

I will conduct all tutorials

Gifts to top 3 students in quizzes and midterm

Pspice examples and explanations

General Notes

Always be in class before the start time!

Use your McMaster email address. Expect a response within 72 hours.

Contest any exam grade within 30 days of the announcement of the result (including the final exam). I apologize for not responding to any late emails.

All examinations are regular booklet exams

Your attendance of the lectures and tutorials may save you in this course. Do not study on your own at home!

General Notes (Cont'd)

Try all solved examples and drill problems

Review complex number analysis

My Exams are usually not trivial

You are only allowed to use McMaster approved calculator
fx991!

Lab section changes start end of next week (I will email you)

Survival Tips in EE2CI5

Attend all lectures and tutorials. I discuss the ideas of all exam problems in lectures and tutorials

Read the corresponding book sections on the same day of the lecture.

Solve all the drills and the homework problems

Do not look up solutions until you have spent enough time thinking!

Do all the laboratory experiments by yourself. Do not depend on someone who will not be there during the midterm/exam.