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New items added since / / : Whole page.

CIRCUIT ANALYSIS II

SM'

Version	From	To	Min Stu	Status	Type	Level	College
	FL	Now		ACT	LEC	MED	ENG
Exam	**Contact Hrs**	**Credits**	**Max Stu**	**Weeks**	**Method**	**Language**	**Dept**
Yes					A/F	ENG	Electrical and Electronics Engineering

Pre Requisites	ELEC

All students taking this course are requested to visit this site frequently to see if there is any update of important exam dates.

It is also recommended that students send their questions and comments regarding the course directly to the course instructor by email.

CONTENTS

Click here, to get a copy of this course outline in PDF format

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COURSE GOALS & OBJECTIVES:

ELEC   is a second course on electric circuits and is intended to both enhance the knowledge of students with regard to electric circuits and develop skills in analysis.

The objectives of this course can be summarized as follows:

- Present the basic concepts of analysis of AC circuits.
- Explain the essentials of magnetic circuits analysis.
- Introduce the basics of analyzing polyphase circuits.

The students will be asked to do Assignments and Mini-Projects of some electric circuits simulations using PSpice software package.

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COURSE OUTLINE:

- **CH : Sinusoidal Alternating Waveforms and Phasor Concept   (hours)**
  - Introduction. Sinusoidal ac voltage generation. The sine wave. Phase relations. Average value. Effective values.
  - Phasor relationships for R, L and C circuits. Impedance and admittance. Phasor diagrams. Rectangular and polar forms and conversion between them.
  - Series and parallel circuits

- **CH : AC Circuits Analysis Techniques   (hours)**
  - Nodal and mesh analysis. Superposition theorem. Norton and Thevenin theorems.

- **CH : General Two-Port Networks (hours)**
  - Terminals and ports, z-parameters. y-parameters. Conversion between z and y parameters.

- **CH : Fourier Analysis (hours)**
  - Non-sinusoidal circuits. Fourier series.

◼ CH : Polyphase Circuits (hours)

◼ Introduction. Three-phase systems. Wye and Delta systems. Phasor voltages. Balanced Delta-connected loads. Balanced four-wire, Wye-connected loads. Unbalanced Wye-connected load. Three phase power. Power Measurement.

◼ CH : AC Power (hours)

◼ Power in time domain. Power in sinusoidal steady state. Average or real power. Reactive power. Summary of AC power in R, L, and C. Complex power, apparent power, and power triangle. Power factor correction.

◼ CH : Magnetic Circuits (hours)

◼ Basic definitions. Ohm's law for magnetic circuits. The magnetizing force. Hysterisis. Ampere's circuital law. Air gaps. Series and parallel magnetic circuits. Magnetically coupled circuits.

◼ CH : Resonance (hours)

◼ Series resonant circuits. Parallel resonant circuits. Quality Factor.

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TEXTBOOK & REFERENCES:

TEXTBOOK:

"Introductory Circuit Analysis"

by: Robert L. Boylestad, Mcmillan Publishing Company,

OTHER REFERENCES:

BOOKS:

"Engineering Circuit Analysis",

by: W. Hayt & J. Kemmerly, Mc. Graw Hill,

"Introduction to Electric Circuits",

by: R. C. Dorf & J. A. Svoboda, Wiley,

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TIME TABLE

Lectures: Saturday, Tuesday   : - :   , CMT/B

Wednesday   : - :   , CMT/B

ASSESSMENT

The course is   Credits. The total number of contact hours is   hours.

The assessment of the students is done as follows:

Quizzes	%
Mini-Project	%
First Exam (~ rd week)	%
Second Exam (~ th week)	%
Final Exam	%

Exams, mini-projects, assignments, and quizzes contribute to the overall grades ranging from A to F.

INSTRUCTOR & CONTACT

*Instructor :*Dr. Adel Gastli & Dr. Abdullah Al-Badi

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LECTURE NOTES

(You need Adobe Acrobat Reader　.　to view these files)

Lecture Notes: Ch　, (other chapters will come very soon)

ASSIGNMENTS

(You need Adobe Acrobat Reader　.　to view these files)

Assignments	Starting Date	Deadline
To be listed later		

COURSE EVALUATION FORM

Students are requested to fill out the attached course evaluation form and submit it after week　. This evaluation will help the instructor improve this course and help the students in better understanding of the course.

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Last Revised: *Sunday, June　,*