

EEE 202 CIRCUIT ANALYSIS II

Course Readings

Required Course textbook

Fundamentals of Electric Circuits, Alexander Sadiku

Engineering Circuit Analysis, Kemmerly Durbin

Electric Circuits, Nilsson Riedel

Matlab Exercises:

Circuit Analysis I with Matlab Applications, Steven T. Karris

Grading -Mid-Term Exams %40 - Lab %20 - Final Exam %40

Course content

The sinusoidal source, rms value of a periodic function

Average power calculations with periodic functions

The sinusoidal response, The phasor

Passive circuit elements in the phasor domain, Kirchhoff's Laws in the frequency domain

Series, parallel and Delta-Y simplification

Source transformations and Thevenin-Norton Equivalent Circuits

The Node Voltage Method. The Mesh Current Method

Review of self inductance, The concept of mutual inductance

The polarity of the mutually induced voltages, energy calculations

The linear transformer, The ideal transformer

Circuit elements in s-domain

Circuit analysis in the s-domain

The transfer function, The transfer function in partial fraction expansion

The transfer function and convolution integral

The transfer function and steady-state sinusoidal response

Passive Filters: Low pass filters, High pass filters, Band pass filters

Active filters: Low pass filters, High pass filters

Active Band pass filters, Band reject filter or band stop filter

Schmitt Trigger using Op-Amp

The Fourier Series and circuit applications

Prof. Dr. Ergun Ercelesi