

Course Syllabus

Course Information

Title	Electrical Network Analysis
Number	CE/EE/TE 3301
Section	0U1
Semester	Summer 2016
Days, Times, and Locations	Tues & Thurs 10:00 am – 12:15pm, HH 2.502
Website	eLearning

Instructor Contact Information

Name	Soudeh A. Khoubrouy, PhD
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Office Location	BSB 13.530
Office Hours	Check eLearning

Course Pre-requisites and Co-requisites, and/or Other Restrictions

Pre-requisite: MATH 2420, PHYS 2326

Course Description

In this course, analysis of RC, RL, and RLC electrical networks, nodal and mesh analyses, steady state and transient analysis of linear time invariant circuits, behavior of linear time invariant circuit under sinusoidal excitation at steady state, frequency domain analysis of linear time invariant circuits using Laplace transformation will be covered.

Student Learning Objectives/Outcomes

After completing this course, students are expected to be able to:

1. Use Kirchhoff's laws to analyze electric circuits.
 2. Analyze resistive circuits.
 3. Analyze circuit using nodal and mesh methods.
 4. Analyze circuits using Thevenin and Norton Equivalent circuits.
 5. Analyze linear time invariant circuits under steady state sinusoidal excitation.
 6. Analyze linear time invariant circuits in time domain.
 7. Analyze linear time invariant circuits in frequency domain.
 8. Analyze and synthesize passive filters.
 9. Analyze multi-port elements.
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Required Textbooks and Materials

James W. Nilsson and Susan Reidel, *Electric Circuits*, 10th or 9th edition, Prentice- Hall.

Additional references:

- James W. Nilsson and Susan Reidel, *Student Study Guide for Electric Circuits*, 10th or 9th edition, Prentice-Hall.
- Charles Alexander, Matthew Sadiku, *Fundamentals of Electric Circuits*, 5th edition, McGraw-Hill.

Assignments & Academic Calendar

Homework: Weekly assignments will be posted on eLearning. Working through these assignments will help you do well in quizzes and exams. You are encouraged to work and learn in groups in doing the homework problems but you need to submit each set of assignments individually and mention the name(s) of your team-mate(s) if there is any. Selected assignments will be graded.

Exams: There are two mid-term exams and a final exam. The exams must be individual efforts.

Tentative Schedule

Course dates	Chapter	Topic
May 24	Chapter 1	Circuit Variables
May 24 and 26	Chapter 2	Circuit Elements
May 26 and 31	Chapter 3	Simple Resistive Circuits
June 2, 7, 9, and 14	Chapter 4	Techniques of Circuit Analysis
Exam 1 (Date: TBA)		
June 16	Chapter 5	Operational Amplifiers
June 21	Chapter 6	Inductance, Capacitance, and Mutual Inductance
June 23	Chapter 7	Response of First-Order RL and RC Circuits
June 28, 30, July 5	Chapter 8	Natural and Step Response of RLC Circuits:
Exam 2 (Date: TBA)		
July 7 and 12	Chapter 9	Sinusoidal Steady-State Analysis
July 14, 19	Chapter 10	Sinusoidal Steady-State Power Calculations
July 21	Chapter 12	Introduction to Laplace Transform
July 26 and 28	Chapter 13	The Laplace Transform in Circuit Analysis
August 2 and 4	Chapter 14	Introduction to Frequency Selective Circuits

Grading Policy

Homework	10%
Exam 1	25%
Exam 2	30%
Exam 3	35%

Final grades will be assigned according to the following scale:
100-90 A; 89-80 B; 79-70 C; 69-60 D and below 60 F.

Course & Instructor Policies

On time class attendance is expected.

Using cell phones is not allowed during class or exam.

No make-up exams will be given except for proven extenuating circumstances.

No late assignment will be accepted without prior authorization.

Students have one week after a graded exam or assignment is returned to discuss any possible grading corrections with the professor. After one week no changes will be allowed.

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.