Network Analysis

The University of Toledo
Electrical Engineering Technology
EET 3250

Name:	Dr. Ngalula Sandrine Mubenga, PhD, PE	**Offered**:	Spring 2019
Email:	ngalula.mubenga@utoledo.edu	**Class Location**:	PL2400
Office Hours:	Tues. and Thurs. 9.30AM-12PM	**Class Day/Time**:	T,R/8.00AM-9:20AM
Office Location:	NE 1624	**Credit Hours**:	3
Instructor Phone:	419-530-3896		

CATALOG/COURSE DESCRIPTION

This course consists of analyses of waveforms, analyses of first order time domain circuits, RLC circuit analyses using Laplace transforms, system transfer functions, Bode plots, Fourier series and Fourier transforms.

STUDENT LEARNING OUTCOMES

Outcome a)   An understanding of the analytical skills associated with electrical engineering technology, as evidenced by the ability to perform analyses of the transient behavior of RLC circuits with Laplace transforms.

Outcome d) An ability to use creativity in the design of electrical systems as evidenced by the use of simulation software to iteratively solve a circuit design problem regarding transient behavior.

Outcome f) An ability to identify, analyze and solve technical problems associated with Electrical Engineering Technology as evidence by the ability to create a transfer function for an electrical system based on computer simulations of the system step response.

Outcome g) An ability to communicate effectively, as evidenced by written reports.

PHILOSOPHY OF TEACHING (TEACHING METHODOLOGY)

This is an active learning course that will require students to be fully engaged. Face-to-face instructions in lectures will provide maximum help to students. Homework, quizzes, and comprehensive tests will be given. The purpose of this course is to help students understand the fundamental network analysis theories and use those theories to solve the relevant problems.

Students are welcome to ask questions and discuss problems. The course will be instructed based on the philosophy of cycling education:

- through the theory to understand the formula
- through the usage of formulae to understand examples
- through the examples to solve similar exercise problems
- through face-to-face instruction to improve learning efficiency
- through exams to emphasize importance and clarify confusion
- through taking this course to have the capability to self-study for future work or research

Recommendations for success:

- Come to lectures and take notes
- Read the relevant contents in the textbook
- Solve examples in the textbook and do homework
- Review the relevant contents and homework before each test or exam

Never hesitate to ask for help from the instructor.

PREREQUISITES AND COREQUISITES
Reactive Circuits (EET 1020) and Differential Equations (ENGT 3020)

REQUIRED INSTRUCTIONAL MATERIALS (TEXTS AND ANCILLARY MATERIALS)
W.D. Stanley, Transform Circuit Analysis for Engineering & Technology, 5th Ed, Prentice Hall. 2002

TECHNOLOGY EXPECTATIONS
Web assist - Blackboard http://blackboard.utdl.edu/

Web assist – http://DrMubenga.com/

Applications- PowerPoint, Words

UNIVERSITY POLICIES

Academic Accommodations
The University of Toledo is committed to providing equal opportunity and access to the educational experience through the provision of reasonable accommodations. For students who have an accommodations memo from Student Disability Services, it is essential that you correspond with me as soon as possible to discuss your disability-related accommodation needs for this course. For students not registered with Student Disability Services who would like information regarding eligibility for academic accommodations due to barriers associated with a potential disability, please contact the Student Disability Services Office.

COURSE EXPECTATIONS

1. *All assignments including homework are graded based on correctness.*
2. *All assignments are to be completed on time and turned in at the beginning of the class/lab.*
3. *You are responsible for all materials covered in class as well as the material assigned in the book.*
4. *There is no make-up quiz, exams or homework for this course.*
5. *Cheating and Academic dishonesty is not allowed and will be punished by rules of University of Toledo Student Handbook. Read this http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-7104%20%20Academic%20dishonesty.pdf*

Electronica Policy: No electronic items: cellular telephones, Blackberrys, personal digital assistants, digital music players or similar items that may disrupt the learning environment may be used at any time for any purpose during the classroom. If a cell phone must be kept on due to a potential emergency situation, it must be on a silent setting. If an emergency call must be taken during a class, the student must leave the classroom prior to answering the call and not return until the call is completed. See also Article IV.B Conduct Rules and Regulations of the Student Code of Conduct at the University of Toledo.

Readings: Reading for the course is shown on the accompanying handout. Readings are to be completed prior to the lecture portion of the class.

If there is a conflict or misunderstanding, please see me privately to work out a resolution.

OVERVIEW OF COURSE GRADE ASSIGNMENT

Midterm Grading
Midterm grades will be presented per university requirements and based on the current updated cumulative scores obtained by the students usually the first 5 or 6 weeks.

Final Grading
A >= 90, B >= 80, C > = 70, D > = 60

Overall: *Homework 16%, Quizzes 24%, Test1 25%, Final Exam 35 %(Comprehensive)*

Details are shown in the following table.

Assignment	Weight for each	Nbr. of assignments	Overall
Homework	2%	8	16%
Quiz	3%	8	24%
Test	25%	1	25%
Final Exam	35%	1	35%
Total:			100%

Grading for missed assignment due to an emergency: For missed assignments due to an emergency or a foreseeable event, students must fill out the missed assignments form and email the form along with written documentations from a 3rd party. **The missed assignment form must be emailed to the instructor on Thursday April 25, 2019.** Final exam grade will be used in lieu of the missed assignment to calculate final grading.

Extra credit work will be given during the semester.

Both the midterm and final grading use the same formula, scale, and weights.

COURSE GUIDELINES

Please use your UT student email address (XX@Rockets.Utoledo.edu) for all your communications. The subject line must be*: EEC3250 LastName Keyword*. E.g: subject: EEC3350 Mubenga Homework4. All others type of email address will go directly to Junk E-mail folder.

Homework assignments are accepted only before or on the assigned day. Homework is graded on correctness. The final answer alone is not enough to get credit. Solution steps must be shown to get credit.

When not done in person, preferred communication between the instructor and students will take place via BlackBoard and email to a student's Rocket email address. While the instructor will not communicate via email on a regular basis throughout the semester, it is advisable that students check their BlackBoard and email regularly so as to keep abreast of any special instructions, clarifications on assignments or cancellations that may occur during the term

SAFETY AND HEALTH SERVICES FOR UT STUDENTS
http://www.utoledo.edu/offices/provost/utc/docs/CampusHealthSafetyContacts.pdf

COURSE AND ASSIGNMENTS SCHEDULES

No Class Dates: Jan 21, March 4-8.

Test Date: Thursday, February 28, 2019 8AM-9.20AM

Final Exam Date: Tuesday April 30, 2019 8AM-10AM

Tentative Course Schedule (Subject to Change depending on the course progress)

Week No.	Course Content	Assessment
1	Waveform analysis	Hmk
2	Time domain circuit models	
3	Time domain circuit models	Hmk, Quiz
4	Transient circuit analysis with differential equations in the time domain.	Hmk, Quiz
5	Laplace transforms and inverse Laplace transforms.	Hmk, Quiz
6	Transform domain circuit models.	
7	Review	Test, Quiz

8	NO CLASS- SPRING BREAK	
9	Transient circuit analysis with Laplace transforms.	Hmk
10	Transient circuit analysis with Laplace transforms.	
11	Transfer functions.	Hmk, Quiz
12	Sinusoidal steady state behavior and Bode plots.	Hmk, Quiz
13	Sinusoidal steady state behavior and Bode plots.	
14	Fourier analysis.	Hmk, Quiz
15	Review	Quiz
16		Final

Tentative Assignment Schedule (Subject to Change depending on the course progress)

Date	Week No.	Read	Test	Homework	Posted on	Due on	Quiz on	due on Thr.
14-Jan	1	chap 2		chap 2	15-Jan	29-Jan		
21-Jan	2	chap 2/3						
28-Jan	3	chap 3		chap 3	29-Jan	5-Feb	chap 2	1/31/2019
4-Feb	4	chap 4		chap 4	5-Feb	12-Feb	chap 3	2/7/2019
11-Feb	5	chap 5		chap 5	12-Feb	19-Feb	chap 4	2/14/2019
18-Feb	6	chap 5						
25-Feb	7	Review	T1 2/28				chap 5	2/26/2019
4-Mar	8	NO CLASS						
11-Mar	9	chap 6		chap 6	14-Mar	26-Mar		
18-Mar	10	chap 6						
25-Mar	11	chap 7		chap 7	26-Mar	2-Apr	chap6	3/28/2019
1-Apr	12	chap 8		chap 8	2-Apr	16-Apr	chap 7	4/4/2019
8-Apr	13	chap 8						
15-Apr	14	chap 9		chap 9	16-Apr	23-Apr	chap8	4/18/2019
22-Apr	15	Review					chap 9	4/25/2019
29-Apr	16	Final	F 4/30					

I have received and read the syllabus.

 Printed Student Name……….

Signature………………………………………………………………………………………………………Date……………………..