



TED UNIVERSITY

Syllabus for EE 201_2 Circuit Theory I

Fall 2016

Instructor:	Asst. Prof. Çiçek Boztuğ
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Time Schedule:	Monday (11.00 – 12.50), Tuesday (14.00 – 14.50)
Office Hours:	Wednesday (11.00 – 13.00) (or by appointment)

Course Code & Number	EE201	Course Title	Circuit Theory I
Type of Course	<input checked="" type="checkbox"/> Compulsory <input type="checkbox"/> Elective	Semester	<input checked="" type="checkbox"/> Fall <input type="checkbox"/> Spring <input type="checkbox"/> Summer
Level of Course	BSc	Year of Study	Sophomore
Course Credit Hours / ECTS	(3+0+0) 3 / 6 ECTS	Pre-requisite / Co-requisite	Pre-requisite: MATH101 Co-requisite: EE203
Mode of Delivery	<input checked="" type="checkbox"/> Face-to-face <input type="checkbox"/> Distance learning	Language of Instruction	<input checked="" type="checkbox"/> English <input type="checkbox"/> Turkish
Course Coordinator	Asst. Prof. Dr. Çiçek Boztuğ Phone: 0312-5850168 E-mail: cicek.boztug@tedu.edu.tr		
Computer Usage	MATLAB and SPICE assignments		
Textbook	J.W. Nilsson and S. Riedel, "Electric Circuits," 10th Ed., Prentice Hall, 2014		
Supplementary Reading	1) Alexander and Sadiku, "Fundamentals of Electric Circuits", 4th Ed., McGraw Hill, 2009. 2) Hayt, Kemmerly, and Durbin, "Engineering Circuit Analysis", 7th Ed., McGraw Hill, 2007. 3) D.E. Johnson, J.R. Johnson, J.L. Hilburn, P.D. Scott, "Electric Circuit Analysis", Wiley, 1992.		
Module and Instructor Evaluation Date	Evaluation will be held on the last day of the class		

Course Catalog Description	Fundamentals of electric circuits, variables and lumped circuit elements. Kirchhoff's laws. Resistive circuits. Methods of circuit analysis. Operational amplifiers (opamps). Energy storage elements. Analysis of first and second order circuits. Steady-state alternating current analysis.
Course Objectives	The goal of this course to develop an understanding of the elements of electric circuits and the fundamental laws, general techniques such as nodal and mesh analysis, Thevenin and Norton equivalent circuits used in analyzing electric circuits, and develop phasor techniques for AC steady-state analysis of circuits. Study on energy storage elements will help students to understand the transient and the steady-state response of RLC circuits. The course also aims to introduce elementary electronic circuits such as operational amplifiers and their circuit models.
Course Learning Outcomes (LO)	Having successfully completed this course, students will be able to: LO-1: Interpret the basic circuit concepts, such as voltage, current, power, energy, etc. LO-2: Use node and mesh analyses methods for the analysis of linear time invariant circuits. LO-3: Analyze circuits by utilizing Thevenin's and Norton's theorems. LO-4: Analyze circuits with operational amplifiers. LO-5: Interpret the operation of capacitors and inductors; and analyze both transient and steady-state response of first order circuits. LO-6: Analyze second order circuits. LO-7: Identify the concept of phasor; and apply it for the AC steady-state analysis of circuits. LO-8: Display a professional commitment to group work through cooperative quizzes.

TENTATIVE COURSE OUTLINE					
Week	Topics	Learning Outcome (LO)	Textbook Reading	Exams	
1	Introduction to Electrical Circuits	1	Ch. 1		
2	Resistive Circuits; Sources; measurement equipments	1	Ch. 2, 3		
3	Linearity; Nodal Analysis	2	Ch. 3, 4		
4	Nodal Analysis; Mesh Analysis	2	Ch. 4		
5	Mesh Analysis	2	Ch. 4	Problem Set	
6	Thevenin's and Norton's theorems;	3	Ch. 4		
7	Thevenin's and Norton's theorems; Power Transfer; Superposition	3	Ch. 4		
8	Op-Amps	4	Ch. 5	Midterm # 1	
9	Analysis of resistive Op-Amp circuits	4	Ch.5		
10	Energy-Storage Elements	5	Ch. 6		
11	First-Order Circuits	5	Ch. 7	Problem Set	
12	First-Order Circuits	5	Ch. 7		
13	Second-Order Circuits	6	Ch. 8	Midterm # 2	
14	Second-Order Circuits	6	Ch. 8		
15	Sinusoidal Steady-State Analysis	7	Ch. 9	Problem Set	
FINAL EXAMS WEEK, January 02-14, 2017 (date and time to be announced later).					

COURSE ASSIGNMENTS	
A. Midterm Exams [40%]	
There will be 2 closed-book midterm exams, 20% for each exam. Exam 1 and Exam 2 will be on the 8 th and 13 th week, respectively. Date and time of the exams will be announced later.	
B. Final [30%]	
There will be a cumulative closed-book final exam covering all topics. Date and time of the final will be announced at the end of the semester.	
C. Pop-Quizzes [30 %]	
There will be 5 pop-quizzes, 6% for each quiz.	

COURSE ASSESSMENTS & LEARNING OUTCOMES MATRIX	
Assessment Methods	Course Learning Outcomes
Interactive problem solving in the class	LO # 1...8
Quizzes	LO # 1...8
1 st Midterm Exam	LO # 1...3
2 nd Midterm Exam	LO # 4...7
Final Exam	LO # 1...7

Teaching Methods & Learning Activities	<input checked="" type="checkbox"/> Telling/Explaining <input checked="" type="checkbox"/> Questioning <input checked="" type="checkbox"/> Reading <input checked="" type="checkbox"/> Problem Solving	<input checked="" type="checkbox"/> Collaborating <input checked="" type="checkbox"/> Web Searching <input checked="" type="checkbox"/> Hands-on Activities <input checked="" type="checkbox"/> Other(s): Homework and MATLAB/Spice assignments
Assessment Methods (Formal & Informal)	<input checked="" type="checkbox"/> Test/Exam <input checked="" type="checkbox"/> Quiz	<input checked="" type="checkbox"/> Other(s): Homework and MATLAB assignments
Student Workload (Total 156 Hrs)	<input checked="" type="checkbox"/> Lectures 42 hrs <input checked="" type="checkbox"/> Course Readings 40 hrs <input checked="" type="checkbox"/> Exams/Quizzes 50 hrs	<input checked="" type="checkbox"/> Other: Solving the problem sets 24 hrs

COURSE POLICIES	
I. Attendance	
<ul style="list-style-type: none"> Regular class attendance is expected for all students at the University. You are not required but advised to attend all classes. Please send your professor a brief e-mail to explain your absence in advance. Your absence will not reduce your attendance rate <i>if and only if</i> you have a legitimate reason for missing a class (such as illness, death in family, a traffic accident, etc.). In case of an illness or emergency, you must supply a formal documentation that supports your claim. Classes start on the hour. Please be respectful of your classmates by being on time. All electronic equipment should be turned off and kept out of sight before lecture starts. 	
II. Make-up Exams	
Make-ups for Midterm Exams 1 and 2 will be available <i>if and only if</i> you have a legitimate reason for missing the exam (such as illness, death in family, a traffic accident, etc.). In case of an illness or emergency, you must supply a formal documentation that supports your claim.	
III. Late Submission Policy	
Late submissions will not be graded. There will be <i>no</i> make-up for quizzes and homework/assignments. Missed assignments and quizzes will result in a grade of zero (0).	
IV. Participation	
In their book, <i>The Adult Student's Guide to Survival & Success</i> , Al Siebert and Mary Karr suggest that the most effective learning technique of all is to study by <i>asking and answering questions</i> . Develop the habit of reading textbooks, taking lecture notes, and studying by asking and answering questions. When you do this, you save many hours of studying and have time to spend with your family or friends.	

There are several ways to go about asking and answering questions.

- When studying on your own, write questions that occur to you while you're reading and then go back and find the answers.
- If you're part of a study group, make a list of questions to ask the group.
- In the classroom, participate fully by asking questions and answering the ones posed by your instructor.

Curiosity is one of the cornerstones of learning. Be curious. Ask questions. Learn faster.

V. Cheating & Plagiarism

Collaboration is strongly encouraged; however, the work you hand in must be solely your own. Cheating and plagiarism are very serious offenses and will be penalized accordingly by the university disciplinary committee.

Cheating has a very broad description which can be summarized as "acting dishonestly". Some of the things that can be considered as cheating are the following:

- Copying answers on exams, homeworks and lab works,
- Using prohibited material on exams,
- Lying to gain any type of advantage in class,
- Providing false, modified or forged data in a report,
- Plagiarising (see below),
- Modifying graded material to be re-graded,
- Causing harm to colleagues by distributing false information about an exam, homework or lab.

All of the following are considered plagiarism:

- Turning in someone else's work as your own,
- Copying words or ideas from someone else without giving credit,
- Failing to put a quotation in quotation marks,
- Giving incorrect information about the source of a quotation,
- Changing words but copying the sentence structure of a source without giving credit,
- Copying so many words or ideas from a source that it makes up the majority of your work, whether you give credit or not.

(www.plagiarism.org)

VI. Disability Support

If you have a disabling condition which may interfere with your ability to successfully complete this course, please contact Dr. Asli Bugay (email: asli.bugay@tedu.edu.tr) or Dr. Tolga İnan (email: tolga.inan@tedu.edu.tr). For more information please see Handbook for Registered Students.

*** GOOD LUCK ***