EE213/EE214 – Spring 2021

LABORATORY INSTRUCTIONS

Course Coordinator: Çağatay Candan (EZ-11A, ccandan@metu.edu.tr)

Course Assistants:

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Course Conduct:

- The lecture hours for EE213 and EE214 are scheduled to be on Tuesdays between 14.40-18.30. However, course conduct of this course is selected to be asynchronous. Some meetings, that will be announced beforehand, may be scheduled at the lecture hours. These meetings may cover some announcements about the course, or they will be in office hour format.
- There will be a video lecture before each experiment (pre-experimental videos) which will cover the introductory knowledge on experiments. These videos will help students with the preliminary work.
- Students will be required to submit a preliminary work at the start of each week starting from 4th week. Preliminary work includes both theoretical analysis and simulation results which are obtained by using SPICE software.
- Each experiment will be recorded in detail by a course assistant. Videos will include all steps of experiments and results will be shared with students. There will be a forum section for each experiment on ODTUClass where students can ask questions about the experiments.
- Students will be required to submit a report at the end of each week. Reports will include simple plots and comments about the results that are obtained during experiments.
- At the end of the week, each student will take a quiz on ODTUClass about the experiment that is conducted on that week.
- The course material and announcements will be shared on ODTUClass. Please regularly check your mails and ODTUClass in order not to miss important deadlines.

Grading:

- Quizzes: 15%
- Preliminary Work: 15%
- Reports: 30%
- Endterm Examination: 40%

Quizzes:

A quiz will be given at the end of each experiment which will cover the experiment content and background information. Some questions in quizzes will be related to the review questions in preliminary work, if applicable. Quizzes will be effective starting from 4th week. These quizzes will consist of multiple choice and fill in the blanks type questions which will be randomly selected from a question pool. **Quizzes will be conducted on ODTUClass on Fridays between 13.40-14.30.**

Preliminary Work:

Unless otherwise stated in the manual, you are required to provide analytical solutions to all the review questions as well as perform simulations to verify your results. Preliminary work will be effective starting from 4th week. Simulations will be done on LTSpice software which will be introduced in 3rd week.

Reports:

Even though results are shared, students will be required to write a simple report that mainly includes plots and comments about the results. A guideline on preparing a lab report as well as a simple template will be put on ODTUClass later. Notice that you are expected to present graphical results and measurements asked in the manual as well as the comparison of the results with the expected ones. Please be careful with your conclusions as they should reflect what you understand from the corresponding experiment rather than summarizing the steps covered during the experiment. More detailed explanation about preparing a report is given in the document "How to prepare a report" which can be found on ODTUClass.

Endterm Examination:

Each student is required to take an endterm examination in the laboratory. During the endterm examination, students will answer questions about the experimental procedures and present results with proper explanations. There will be separate endterm examinations for EE213 and EE214. Endterm examinations are planned to be conducted remotely during the final examinations period. Exams will be given to each student individually and details will be announced on ODTUClass before the examination.

Schedule:

Course	Week	Spring 2020-2021 / EE213 - EE214
EE213	1	-
	2	Introduction - Signal Generators and Oscilloscopes
	3	SPICE Workshop
	4	Intro. to Voltage, Current and Resistance Measurements - Resistive Circuits
	5	Operational Amplifiers - I and II
	6	Capacitors & Inductors - First Order Circuits
EE214	7	Diodes and Rectifiers
	8	Miscellaneous Op-Amp Circuits
	9	Transformers & MATLAB Workshop
	10	Impedance Measurement and Complex Power
	11	Frequency Response
	12	Active RC Filters
	13	Bipolar Junction Transistor Characteristics
	14	Basic Gates, Voltage and Current Amplifiers Using BJT

Make-up Policy: Make-up will be provided with a valid excuse. If you think you have a valid excuse, please contact one of the course coordinator assistants.