

EE306 – Introduction to Radio Frequency (RF) and Microwave Design

Sabanci University, 2021-2022 Spring

Instructor: Korkut Kaan Tokgoz, korkut.tokgoz@sabanciuniv.edu

Office Hours: Online (any time our schedule match for short meetings)
Face-to-face: Will be decided after add-drop period. (Office: FENS1064)

Teaching Assistant: Tahsin Alper Ozkan, talper@sabanciuniv.edu

Grading Policy: Homework 20%, Midterm 20%, Projects 30%, Final 30%
Midterm will be around mid to late April.

Lectures: Tuesdays 10:40-11:30 FASSG052
Wednesdays 08:40-10:30 FASSG006

Recitations: Online: Fridays 08:40-10:30

Tentative Outline:

Date	Topic	Ludwig&Bretchko	Pozar
Mar 2	Introduction	Ch. 1.1-1.5	Ch. 1.1-1.4
Mar 8, 9 Mar 15, 16	Transmission Lines	Ch. 2.1-2.3, 2.6-2.11	Ch. 2.1, 2.3-2.8 Ch. 3.5, 3.7, 3.8, 3.10
Mar 22, 23 Mar 29, 30	Smith Chart and Matching Networks	Ch. 3.1-3.4 Ch. 8.1-8.2	Ch. 2.4 Ch. 5.1-5.5
Apr 5, 6 Apr 12, 13	Two-Port Networks and S-Parameters	Ch. 4.1-4.4	Ch. 4.2-4.6
Apr 19, 20 Apr 26, 27	Amplifier Design Stability	Ch. 9.1-9.5, 9.7	Ch. 12.1-12.5
May 3, 4	Holidays		
May 10, 11	Dividers and Couplers	App. G	Ch. 7.1-7.3, 7.5-7.8
May 17, 18	Extra (Discussions, make-up lectures, etc.)		
May 24, 25	Noise and Distortion	App. H	Ch. 10.1-10.4
May 31, Jun 1 Jun 7, 8	Extra (Discussions, make-up lectures, etc.)		

Projects: Hands on projects, including implementation and measurements. During Recitations you will learn about these, and some simulation tools.

1. Quarter-wave transformer (around the midterm)
2. Transistor amplifier working around 1-GHz (towards the end of the term)

Recommended Textbooks: Note that these are recommended, not strictly followed.

1. RF Circuit Design, Theory and Applications by R. Ludwig & P. Bretchko.
2. Microwave Engineering by David M. Pozar.