EE101

Introduction to Electrical and Electronics Engineering

Instructors: Selçuk Yerci, Elif Vural, Elif Tuğçe Ceran Arslan, S. Figen Öktem Seven

Lectures: Mon 10:40 – 12:30

Assistants: Nurullah Gülmüş, M. Cem Şahiner

	W#	Topic	
6 March	1	Course Content & Introduction to Studying Engineering	2 T
13 March	2	Introduction to **MATLAB**	2 T
20 March	3	**MATLAB** – hands-on exercise	2 L
27 March	4	Contemporary issues in Electrical and Electronics Engineering **Assignment of Project #1: Denoising an audio signal: How to solve the vuvuzela problem during the 2010 World Cup.**	2 T
3 April	5	**Energy:** How to generate, how to distribute Steam engine, electromechanical generator, wind&hydro power, photovoltaics, power grid	2 T
10 April	6	**Sensing systems:** How to sense the World around us. Sensors, ADC conversion, noise, sampling, IoT **Assignment of Project #2: Energy generation and distribution: Can photovoltaics power our department?**	2 T
17 April	7	**Electromagnetic waves**: Generation, transfer, and detection: fiber optic, lasers, microwave oven, IR&THz imaging	2 T
24 April	8	**Signals, Systems, and Feedback:** Control, Robotics, communications, signal processing, smart cities **Assignment of Project #3: Physical activity monitoring system via a mobile device.**	2 T
TBD	9	**Computers and Machine Learning:** Big data, artificial intelligence, quantum computers	2 T
8 May	10	Introduction to microcontrollers: Arduino basics, basic input/outputs, linking with Matlab, hands-on Ardunio **(Tentative) Assignment of Project #4: Arduino-based visible light communication**	1 T 1 L
15 May	11	Engineering **ethics**, **circular economy, social impact, gender balance, vulnerable groups**	2 T
22 May	12	**Opportunities during METU-EEE education** STAR, TUBITAK STAR, Student Clubs, Teknofest, Adim-ODTU, Interships, Teknokent	2 T
29 May	13	**Career opportunities for EE graduates**	2T
5 June	14	**Presentation by senior students** Engineering design course project presentations	2T

Textbook: Raymond B. Landis, Studying Engineering: A Road Map to a Rewarding Career 4th Edition, Discovery Press, Los Angeles, California

- 4 Projects, teams of a maximum of 3 students, 2 weeks per project

Tentative Grading: 4 Project reports (15%, each), hands on exercise report (5%), attendance (25%), Ethics homework (10%)