Alanya Alaaddin Keykubat University | Rafet Kayış Faculty of Engineering
Electrical-Electronics Engineering Department
2023-2024 Fall Semester

Syllabus	
Code/Name	EEE 301 / Signals and Systems I
Type	Required
Credit/ECTS	6/6
Hour per Week	4(4+0+0)
Level/Year	Undergraduate/3
Semester	Fall
Classroom	WWF | A103
Content	Signals, Systems, and Signal Processing, Sampling Theorem and Signal Reconstruction, Analog-to- Digital and Digital-to-Analog Conversion, Discrete-Time Signals and Systems, Classification of Signals and Systems, Analysis of Discrete-Time Linear Time-Invariant Systems, Impulse Response and Convolution, Discrete-Time Systems Described by Difference Equations, The Z-Transform and Its Application to The Analysis of LTI Systems, Analysis of Linear Time-Invariant Systems in the z- Domain.
Prerequisites	EEE 104 and EEE 110
Textbooks	***Primary*** Class Notes JG Proakis, DG Manolakis, Digital Signal Processing-Principles, Algorithms and Applications, Prentice Hall, 3th Ed., 1996. ***Supplementary*** SW Smith, The Scientist and Engineer's Guide to Digital Signal Processing, California Technical Publishing, 2nd Ed., 1999.
Objectives	• To comprehend basic system properties and signals • To apply transform techniques to signals and systems • To analyze LTI systems by transform techniques • To analyze engineering problems by using properties of transform techniques
Course Outcomes	In this course you will be able to: CO1 comprehend basic systems properties and signals. CO2 apply transform techniques to signals and systems. CO3 analyze LTI systems by transform techniques. CO4 analyze engineering problems by using properties of transform techniques.

Weekly Schedule of Topics

W	Topic
1	Signals, Systems and Signal Processing
2	Analog-to-Digital and Digital-to-Analog Conversion
3	Sampling and Quantization
4	Discrete-time Signals and Systems
5	Analysis of Discrete-time Linear Time-Invariant Systems
6	The Convolution Sum
7	Properties of Convolution and The interconnection of LTI Systems
8	Casual Linear Time-Invariant Systems
9	Discrete-time Systems Described by Difference Equations
10	Implementation of Discrete-time Systems

11	The z-Transform
12	Properties of the z-Transform
13	Analysis of Linear Time-Invariant Systems in the z-Domain
14	Causality and Stability

Contribution to Program Outcomes*

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	4	4	2	2	1	5	0	3	2	3	1
CO2	4	5	1	4	0	3	4	2	4	3	0
CO3	4	5	3	4	2	5	0	3	2	3	1
CO4	4	4	2	5	0	4	2	3	1	4	0
CO5	5	4	4	4	1	5	4	3	4	1	2

* Contribution Level | 0: None | 1: Very Low | 2: Low | 3: Medium | 4: High | 5: Very High

Course Policy

- Be in the class on time.
- English should always be used to communicate with one another.
- At least 70% attendance is required, otherwise a grade of **DZ** will be assigned.
- You must be present in class for the exercises and solve problems.

Cheating & Plagiarism

- Copying or letting someone copy your work on exams, assignments, or reports is cheating.
- Cutting and pasting text, figures and tables from web sources or any other electronic source is plagiarism.
- The consequence of academic dishonesty is to receive a grade of **FF** for the course.

Evaluation

Exercises	10%
Midterm	30%
Final Exam	60%
Total	100%

Instructor

Name/Surname	Emrah Irmak	Email	emrah.irmak@alanya.edu.tr
Room	228	Office Hours	Tu 10.30-11.30 | F 15.30-17.30

Prepared by Emrah Irmak on June 7th, 2024.