Jordan University of Science and Technology

Faculty of Engineering

Electrical Engineering Department

EE260 Signal And Systems Analysis

Summer Semester 2019-2020

Course Catalog
3 Credit Hours. Introduction to continuous- and discrete-time systems and signals. Linear time- invariant continuous- and discrete-time systems, and convolution. Fourier analysis for continuous- and discrete-time signals and systems. Laplace Transform and Z-Transform.

Text Book	
Title	Signals, Systems, and Transforms,
Author(s)	Charles Phillips, John Parr and Eve Riskin
Edition	4th Edition
Short Name	Text Book
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref#1	Signals and Systems	A. Oppenheim	2nd Edition	

Instructor	
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Instructor	
Name	**Prof. Khaled Mayyas**
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Class Schedule & Room
Section 1: Lecture Time: Sun, Mon, Tue, Wed : 10:00 - 11:30 Room: منصة الكترونية Section 2: Lecture Time: Sun, Mon, Tue, Wed : 11:30 - 13:00 Room: منصة الكترونية Section 3: Lecture Time: Sun, Mon, Tue, Wed : 13:00 - 14:30 Room: منصة الكترونية

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
242042	EE204 Introduction To Linear Systems	Pre./Con.
242100	EE210 Circuits (1)	Prerequisite / Pass

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	Introduction to Signals and Systems	**Ch1** From **Text Book**
Weeks 2, 3	Continuous-Time Signals and Systems	**Ch2** From **Text Book**
Weeks 4, 5	Continuous-Time Linear Time-Invariant Systems	**Ch3** From **Text Book**
Weeks 6, 7	Fourier Series	**Ch4** From **Text Book**
Weeks 8, 9, 10	Fourier Transform	**Ch5** From **Text Book**
Weeks 11, 12	Laplace Transforms	**Ch7** From **Text Book**
Weeks 12, 13	Discrete-Time Signals and Systems	**Ch9 and Ch10** From **Text Book**
Week 14	Discrete-Time Fourier transforms	**Ch12** From **Text Book**
Week 15	The Z- Transform	**Ch11** From **Text Book**

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Define basic operations such as time scale, time shift, time reverse, and combinations of these operations for signals. [1ABET1]	8%	Homeworks
Learn properties and classification of continuous-time as well as discrete-time signals. [1ABET1]	7%	Homeworks

Determine continuous- as well as discrete-time system characteristics (e.g., causality, linearity, time-invariance, etc.). [1ABET1]	10%	Homeworks
Determine & apply differential equation models for linear time-invariant systems and circuits (continuous- and discrete-time). [1ABET1]	8%	Homeworks
Use graphical and analytical methods to compute a convolution (continuous time and discrete-time). [1ABET1]	16%	Homeworks
Calculate Fourier series expansions for periodic continuous-time signals and plot line spectra. [1ABET1]	8%	
Implement the forward and inverse Fourier transforms to analyze signals and systems. [1ABET1]	8%	
Obtain frequency response of a system using Fourier Transform. [1ABET1]	3%	
Use Fourier transform methods for analysis of linear systems. [1ABET1]	5%	
Perform Laplace transform for signals. [1ABET1]	7%	
Identify system transfer function. [1ABET1]	2%	
Use Laplace transform methods for analysis of continuous-time linear systems. [1ABET1]	5%	
Calculate the discrete-time Fourier transform of signals. [1ABET1]	2%	
Identify the Z-transform for discrete-time signals and plot its region of convergence. [1ABET1]	5%	
Differentiate between bilateral and unilateral Z-transforms. [1ABET1]	2%	
Use the forward Z-transform and inverse Z-transform to analyze signals and systems. [1ABET1]	4%	

Relationship to Program Student Outcomes (Out of 100%)						
ABET1	ABET2	ABET3	ABET4	ABET5	ABET6	ABET7
100						

Evaluation	
Assessment Tool	**Weight**
First	30%
Homeworks	20%
Final	50%

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