



Faculty of Engineering and Technology

Department of Electrical and Computer Engineering

ENEE 2312 – Signals and Systems

First Semester 2024/2025

Course Outline

Instructors

- Dr. Alhareth Zyoud

Office Hours

- N/A

Teaching Assistant

- N/A

Contact Hours

- 3 credit hours
- Lectures:
3 hours x 16 weeks = 48 hours

Prerequisites:

- MATH 331
Ordinary Differential Equations

Course Website:

N/A

Important Dates

Course Objectives

- To understand the concepts of signals and systems for both continuous and discrete case
- To be able to define the proper signal model and to classify signals\
- To be able to classify the systems and their characteristics
- To be able to determine and analyze system response for the elementary signals
- To understand and apply the integral form of system solution(convolution)
- To be able to apply the Laplace transform in system analysis
- To be able to understand and determine the Fourier series and transform
- To be able to determine and analyze the system frequency response
- To be able to understand discrete signals and systems models
- To be able to define LTI discrete system using difference equations and transfer functions
- To be able to convert between continuous and discrete signals and system models
- To be able to understand the Z-transform and its applications in signal and systems
- To be able to understand practical applications of signals and systems
- Use software tool (Matlab/ Simulink) to analyze various signals and systems

Course Content

The following topics will be covered:

Continuous Signals and Systems

- Signals
- Systems
- Fourier Series
- Fourier Transform

Discrete Signals and Systems

- Signals
- Systems
- Z-transform and applications

Textbook

Signals and Systems, Continuous and Discrete, R. Ziemer, W. Tranter & R. Fannin, McMillan, 4th edition, 1998

Learning Outcomes

1. Ability to apply mathematics, science and engineering principles
2. Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

Evaluation

Short Exams	15 %
Midterm Exam	35 %
Assignment	10 %
Final Exam	40 %