ELEG 51703 Digital Signal Processing
Course Syllabus

General Information:

Instructor: Jingxian Wu
Office: Bell 3168
Email: wuj@uark.edu
Phone: (479) 575-6584
Office Hour: Tue. 12:30-1:30

Required Material:

- Software: Matlab

Reference:

- S.S. Soliman, M.D. Srinath, *Continuous and discrete signals and systems*, 2nd Ed., Prentice Hall, 1998. (Optional)
- Luis F. Chaparro, *Signals and Systems Using Matlab*, Academic Press, 2010. (Optional)

Prerequisites:

ELEG 3124 Signals and Systems

- Familiarity with C Programming, Matlab Programming, and Assembly Programming
- Knowledge of continuous-time signals and systems
- Knowledge of convolution, Fourier transform, and Laplace transform
- Knowledge of Memory and Peripherals (e.g., RAM, ROM, ADC, DAC)

Learning Objectives:

To understand the concepts of discrete-time signals and systems, linear system analysis, frequency domain analysis, z-domain analysis. To understand the structure and concept of DSP, to be able to design various filters, communication applications, and multimedia applications with DSP.

Grading:

- Test 1 24%
- Test 2 24%
- Test 3 24%
- Homework 14%
- Lab 14%

- A: $90 \leq$ grade ≤ 100
- B: $80 \leq$ grade < 90
- C: $70 \leq$ grade < 80
- D: $60 \leq$ grade < 70
- F: $0 \leq$ grade < 60

- Due dates for homework will be strictly enforced. Late submission within one week after due date will receive a 20% grade deduction, and no credit if submitted after one week from the due date.
- If for some legitimate reason (sickness, death in the family, etc.), you cannot take a **test** on the scheduled day, you must notify the instructor **prior** to the exam.

Online Resources:

- Course materials (Slides, Homework, Labs, References, etc) can be found at https://wuj.hosted.uark.edu/teaching/eleg5173/eleg5173.html
- Please check course website **at least once per week** for updates.

Academic Honesty:

Each University of Arkansas student is required to be familiar with and abide by the University's 'Academic Integrity Policy' which may be found at http://provost.uark.edu/ Students with questions about how these policies apply to a particular course or assignment should immediately contact their instructor.

Tentative

- Week 1: Ch.1 Discrete-Time Signals and Systems

Schedule:

- Week 2: Ch. 1 Discrete-time Signals and Systems
- Week 3: Ch. 1 Discrete-Time Signals and Systems
- Week 4: Ch. 2 The Z-Transform
- Week 5: Ch. 2 The Z-Transform
- Week 6: Ch. 2 The Z-Transform
- Week 7: Ch. 2 The Z-Transform (**Test 1 on 3/6 Thu.**)
- Week 8: Ch. 3 Discrete-Time Fourier Transform
- Week 9: Ch. 3 Discrete-Time Fourier Transform
- Week 10: Ch. 3 Discrete-Time Fourier Transform
- Week 11: Ch. 3 Discrete-Time Fourier Transform
- Week 12: Ch. 4 Discrete Fourier Transform
- Week 13: Ch. 4 Discrete Fourier Transform (**Test 2 on 4/10 Thu.)**
- Week 14: Ch. 4 Discrete Fourier Transform
- Week 15: Ch. 5 Discrete-Time Filters
- Week 16: Ch. 5 Discrete-Time Filters (reading day 5/2)

Week 17: **Test 3 in the week of 5/6**

The above schedule is subject to change without prior notice.