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Office Hours:  
Monday, Tuesday and Wednesday: 4:30 PM-5:30 PM  
and by appointment  

Course Overview:  

1- Review of continuous-time signals and systems.  
2- Fundamentals of discrete-time signals and systems  
   A- Discrete-time signals:  
      - Elementary discrete-signals  
      - Basic operations applied to discrete-time signals  
      - Classification of signals.  
      - Representation of signals in the frequency domain (the Fourier transform)  
   
   B- Discrete-time systems:  
      - Linear time-invariant systems  
      - System description:  
          - Impulse response  
          - Difference equation  
          - Transfer function  
          - Frequency response  
   
3- The z-transform and its applications.  
4- An introduction to the design of digital filters:  
   A- Design of IIR (infinite impulse response) filters using the bilinear transformation
B- Design of FIR (finite impulse response) filters using the window method

5- The discrete Fourier Transform (DFT)

6- Processing of continuous-time and discrete-time signals using digital signal processing techniques:
   A- Time domain techniques
      - short-time energy representation
      - Autocorrelation techniques
   B- Frequency domain-techniques
      - The FFT method
      - The short-time DFT method.

7- Selected topics.

Computer usage:
Matlab and some of its toolboxes are used in the design and simulation of digital system.

Textbooks:

References:

Grading system:
   Mid-term test 30%
   Final examination 40%
   Term computer assignments 30%
   Total 100%

Tests and exams are open book and notes. Honor Code must be strictly observed

Homework: Solutions to the homework assignments will be available to students.