EO 3404: Applied Digital Signal Processing

Lectures First

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- *Follow this if you prefer to watch the lectures first and then read the textbook;*
- *On the left of each video, you can click the textbook icon* *to link to the appropriate text.*
- *There are four Units:*
  - **A. Signals (weeks 1-3)**
  - **B. The Discrete Fourier Transform (weeks 4-6)**
  - **C. Filters (weeks 7-10)**
  - **D. Beamforming (week 11)**
- *For each Unit please find the Computer Assignments in the "Computer Assignments" folder.*
- *Quizzes can be taken directly from Sakai, if you have access, or please contact me (rcristi@nps.edu) if you don't.*

- # Weeks 1-3 Lectures

A. Signals

A1. Introduction to Signals: *PowerPoint Slides*

- *Section1-Seg1*
- *Section1-Seg2*
- *Matlab-Basics*
- *Matlab-Applications*
- *Questions and Problems*
- *Computer Assignment A1*

A2. Sinusoids and Complex Exponentials: *PowerPoint Slides*

- *Section2-Seg1*
- *Section2-Seg2*
- *Section2-Seg3*
- *Questions and Problems*
- *Computer Assignment A2*

A3. Frequency Representation: *PowerPoint Slides*

- *Section3-Seg1*
- *Section3-Seg2*
- *Questions and Problems*

Take Quiz 1

- # Weeks 4-6 Lectures

B. The Discrete Fourier Transform

B1- Fourier Analysis: *PowerPoint Slides*

- *Section1-Seg1*
- *Section1-Seg2*
- *Section1-Seg3*
- *Section1-Seg4*
- *Section1-Seg5*
- *Section1-Seg6*
- *Problems*

B2- Spectral Estimation: *PowerPoint Slides*

- *Section2-Seg1*
- *Section2-Seg2*
- *Problems*
- *Computer Assignment B1*

B3- The Short Time Fourier Transform (STFT): *PowerPoint Slides*

- *Section3-Seg1*
- *Section3-Seg2*
- *Computer Assignment B2*

Take Quiz 2

- # **Weeks 7-10 Lectures**

C. Filters

C1-Systems: *PowerPoint Slides*

- *Section1-Seg1*
- *Section1-Seg2*
- *Problems*
- *Computer Assignment C1*

C2-Filter-Design: *PowerPoint Slides*

- *Section2-Seg1*
- *Section2-Seg2*
- *Problems*
- *Computer Assignment C2*

C3-Matched Filters: *PowerPoint Slides*

- *Section3-Seg1*
- *Section3-Seg2*
- *Problems*
- *Computer Assignment C3*

Take Quiz 3

- # **Week 11 Lectures**

D. Beamforming

D1-Fourier Transform: *PowerPoint Slides*

- *Section1-Seg1*
- *Section1-Seg2*
- *Matlab Example*

D2-Beamforming: *PowerPoint Slides*

- *Section2*
- *Matlab Example*
- *Computer Assignment C2*

The End !