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:
  o A. Signals (weeks 1-3)
  o B. The Discrete Fourier Transform (weeks 4-6)
  o C. Filters (weeks 7-10)
  o 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!*