SUPPLEMENTARY MATERIALS II-B-1C: DSP DEVELOPED COURSE MATERIALS' TOPICS

Here is a complete listing of the 48 topics covered in my developed course materials for the DSP course, any of which are available on request.

1. Syllabus
2. Course schedule
3. Complex math diagnostic and solution
4. DSP student goals sheet
5. Bilinear transformation
6. Digital filter design
7. Guidelines for DSP Application presentations and reports
8. Matlab BLT, Butterworth, Chebyshev 1
9. 15 Complex facts of life
10. Intro to DSP and sampling
11. Matlab commands for complex numbers
12. Sampling in color
13. Sampling problem
14. DT signals, DT systems
15. Matlab signals
16. Matlab code for signals
17. Matlab convolution
18. Motivation for z-transform and why useful
19. Deconv, poly, residuez, freqz
20. Finding impulse response
21. Investigating region of convergence and ROC summary
22. Matlab code partial fraction expansions
23. Second order systems
24. Intro to frequency response
25. Frequency response of second order FIR filter
26. z-transform for review
27. Frequency domain analysis of LTI systems – for review
28. LTI benefits
29. Table 3.1 Example signals and their ROCs
30. Table 3.2 z-transform properties
31. Table 3.3 z-transform pairs
32. Final project proposal guidelines
33. DF I, DF I practice
34. Filter implementation
35. IIR parallel realization
36. IIR filter implementation
37. FIR filter structures
38. Guidelines for DSP Final Project Written Report and Presentation
39. Matlab code for IIR cascade and parallel realizations
40. Round-off noise in IIR filters
41. Connecting the DFT to the DTFT
42. Finding tne 4-point DFT, IDFT
43. Why do we need circular conv for the DFT
44. A return to the BLT
45. Analog2digital Butterworth filter example using the BLT
46. LPF design using Matlab
47. Proof for FIR types 1, 2 system functions
48. Properties of LP FIR filters