

EE438 Digital Signal Processing with Applications Spring 1999 - Lecture and Laboratory Schedule

Wk	Day	HW due	Laboratory	Lecture number and title	Readings
1	Jan. 11			1. Introduction	1
	Jan. 12		Lab 1: D-T and C-T Sig.		
	Jan. 13			2. Signal Properties	1
	Jan. 14				
	Jan. 15			3. System Properties	1
2	Jan. 18	*****Martin Luther King*****			
	Jan. 19		Lab 2: Dis.-Time Systems		
	Jan. 20			4. CTFT & DTFT	2
	Jan. 21				
	Jan. 22	HW#1		5. Frequency analysis	2
3	Jan. 25			6. Sampling	3
	Jan. 26		Lab 3: Freq. Analysis		
	Jan. 27			7. Reconstruction	3
	Jan. 28				
	Jan. 29	HW#2		8. D-T Filt. & Zero Order Hold	3
4	Feb. 1			9. Interpolation & Decimation	4
	Feb. 2		Lab 4: Sampling and Recon.		
	Feb. 3			10. Z-transform	5
	Feb. 4				
	Feb. 5	HW#3		11. Z-transform	5
5	Feb. 8			12. DFT	6
	Feb. 9		Lab 5: Digital Filter Designs		
	Feb. 10			13. FFT	6
	Feb. 11				
	Feb. 12			EXAM	
6	Feb. 15			14. Circular Convolution	6
	Feb. 16		Lab 5: Digital Filter Designs		
	Feb. 17			15. Quantization	
	Feb. 18				
	Feb. 19	HW#4		16. 2-D Intro. & CSFT	
7	Feb. 22			17. CSFT properties	
	Feb. 23		Lab 6: DFT & FFT		
	Feb. 24			18. 2-D Transform pairs	
	Feb. 25				
	Feb. 26	HW#5		19. 2-D scanning & sampling	
8	Mar. 1			20. Tomography	
	Mar. 2		Lab 6: DFT & FFT		
	Mar. 3			21. Tomography	
	Mar. 4				

	Mar. 5	HW#6	22. Tomography
9	Mar. 8		23. Tomography
	Mar. 9	Lab 7: D-T Random Processes	
	Mar. 10		24. Tomography
	Mar. 11		
	Mar. 12		EXAM
10	Mar. 22		25. Point wise image mappings
	Mar. 23	Lab 7: D-T Random Processes	
	Mar. 24		26. 2-D Filtering
	Mar. 25		
	Mar. 26	HW#7	27. Probability
11	Mar. 29		28. Expectation
	Mar. 30	Lab 8: Quantization	
	Mar. 31		29. Covariance and autocorrelation
	April 1		
	April 2	HW#8	30. Random Processes
12	April 5		31. Power Spectrum
	April 6	Lab 9: Speech Processing	
	April 7		32. Speech
	April 8		
	April 9	HW#9	33. Speech
13	April 12		34. Speech
	April 13	Lab 9: Speech Processing	
	April 14		35. Speech
	April 15		
	April 16		EXAM
14	April 19		35. Speech
	April 20	Lab 10: Image Processing	
	April 21		
	April 22		
	April 23		
15	April 26		36. Speech
	April 27	Lab 10: Image Processing	
	April 28		37. Speech
	April 29		
	April 30	HW#10	38. Speech
	May ?		Final Exam

Recommended Reading

1. Signals and systems:

P&M Chapter 1, Sec. 1.1 - 1.3 (pp. 1-21)

P&M Chapter 2, Sec. 2.1 - 2.3 (pp. 43-95)

P&M Chapter 2, Sec. 2.4.4 (pp. 108-111).

2. Discrete-time Fourier transform:

P&M Chapter 4, Sec. 4.2.3 - 4.4.4 (pp. 253-319).

3. Sampling:

P&M Chapter 1, Sec. 1.4.1 – 1.4.2 (pp. 22-33);

P&M Chapter 9, Sec. 9.3 (pp. 763-774);

4. Sampling rate conversion

P&M Chapter 10, Sec. 10.1-10.4 (pp. 782-792).

5. Z transform:

P&M Chapter 3, Sec. 3.1 – 3.4 (pp. 151-196)

P&M Chapter 3, Sec. 3.6.1 - 3.6.6 (pp. 203-212).

6. Discrete Fourier transform

P&M Chapter 5, Sec. 5.1 – 5.4 (pp. 394-439);

P&M Chapter 6, Sec. 6.1 – 6.2 (pp. 448-478).

Key

P&M *Digital Signal Processing*, 3rd edition, John G. Proakis and Dimitris G. Manolakis, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, ISBN 0-13-373762-4, 1996.