

Course Schedule and Assignments for ELC 4350 – Spring 2015

Date	Day	Lect.	Lecture Topics	Chapter	Pages	Problems
1/13	T	1	Introduction to Communication Systems	1	1-19	None
1/15	R	2	Fourier Review, Signal Distortion over a Communication Channel, Signal Energy and Energy Spectral Density, Signal Power and Power Spectral Density	2 3	20-69 91-155	3.3-4; 3.3-6; 3.3-9; 3.4-2; 3.6-1; 3.7-4; 3.8-2
1/20	T	3	QUIZ 1, Baseband versus Carrier Communications, Double-Sideband Amplitude Modulation, MATLAB Review/Overview, PROJECT 1 (P1) ASSIGNED	4	178-190 Handout	4.2-1; 4.2-2; 4.2-4; 4.2-7
1/22	R	4	Amplitude Modulation (AM)	4	190-197	4.3-1; 4.3-2; 4.3-4; 4.3-7; 4.3-8
1/27	T	5	QUIZ 2, Project Discussions			Work on project.
1/29	R	6	Bandwidth-Efficient Amplitude Modulations, Amplitude Modulations: Vestigial Sideband (VSB), P1 DUE, P2 ASSIGNED	4	197-210	4.4-2; 4.4-3; 4.4-4; 4.4-6; 4.4-7
2/3	T	7	QUIZ 3, Local Carrier Synchronization, Frequency Division Multiplexing, Phase-Locked Loop and Applications, Superheterodyne AM Receiver	4	210-220	Handout (4.8-1; 4.8-2 of Third Ed.); 4.8-1
2/5	R	8	Nonlinear Modulation	5	252-259	5.1-1; 5.1-2; 5.1-4
2/10	T	9	QUIZ 4, Bandwidth of Angle-Modulated Waves, P2 DUE, P3 ASSIGNED	5	259-272	5.2-1; 5.2-2; 5.2-3; 5.2-4; 5.2-5; 5.2-6; 5.2-7
2/12	R	10	Generating FM Waves, Demodulation of FM Signals, Effects of Nonlinear Distortion and Interference, Superheterodyne Analog AM/FM Receivers	5	272-296	5.3-1, 5.3-2, 5.4-1, 5.4-2
2/17	T	11	QUIZ 5, Sampling Theorem, Pulse-Code Modulation (PCM), Part 1	6	302-322	6.1-1; 6.1-2; 6.1-3; 6.1-5
2/19	R	12	Pulse-Code Modulation (PCM), Part 2, P3 DUE, P4 ASSIGNED	6	322-332	6.2-1, 6.2-2, 6.2-11
2/24	T	13	QUIZ 6, Differential Pulse-Code Modulation (DPCM), Delta Modulation	6	341-351	6.7-1a, b, c, e
2/26	R	14	Digital Communication Systems, Line Coding, Pulse Shaping	7	377-406	7.2-1; 7.2-2; 7.2-4; 7.3-1; 7.3-2; 7.3-3; 7.3-6; 7.3-7
3/3	T	15	QUIZ 7, Scrambling, Digital Receivers and Regenerative Repeaters, Eye Diagrams, Digital Carrier Systems, <i>M</i> -Ary Digital Carrier Modulation,	7	406-437	7.4-1; 7.4-2; 7.5-1; 7.5-3; 7.6-1; 7.6-3; 7.7-1; 7.7-3; 7.8-1; 7.8-3
3/5	R		MIDTERM EXAM: Chapters 1-7			
3/10, 3/12			NO CLASS: Spring Break			
3/17	T	16	From Random Variable to Random Process, Classification, P5 ASSIGNED	9	511-520	9.1-1; 9.1-4; 9.1-5; 9.2-2
3/19	R	17	Power Spectral Density, Multiple Random Processes	9	520-535	9.3-2; 9.3-3; 9.4-1;
3/24	T	18	QUIZ 8, Transmission of Random Processes Through Linear Systems, Bandpass Random Processes, Optimum Filtering: Wiener-Hopf Filter	9	535-542	9.6-1; 9.6-2; 9.6-3; 9.7-1; 9.7-3; 9.7-4; 9.8-1; 9.8-3
3/26	R	19	Analytical Figure of Merit; Amplitude-Modulated Systems, P5 DUE, P6 ASSIGNED	10	564-574	10.1-1; 10.1-2; 10.2-1; 10.2-2; 10.2-4
3/31	T	20	QUIZ 9, Angle-Modulated Systems, Pulse-Modulated Systems	10	574-600	10.3-1; 10.3-2; 10.3-6; 10.4-1; 10.4-3
4/2	R	21	Optimum Linear Detector for Binary Polar Signaling; General Binary Signaling	11	605-619	11.1-1; 11.1-3; 11.2-1; 11.2-2; 11.2-6
4/7	T	22	QUIZ 10, Coherent Receivers for Digital Carrier Modulations, Signal Space Analysis of Optimum Detections, P6 DUE, P7 ASSIGNED	11	619-629	11.3-1; 11.4-1; 11.4-2; 11.4-4; 11.4-5
4/9	R	23	Vector Decomposition of White Noise Random Processes	11	629-637	11.5-1; 11.5-2; 11.5-3; 11.5-4; 11.5-5
4/14	T		NO CLASS: Diadeloso			
4/16	R	24	QUIZ 11, Optimum Receiver (Part 1), P7 DUE, P8 ASSIGNED	11	635-650	11.6-1; 11.6-2; 11.6-3; 11.6-4
4/21	T	25	QUIZ 12, Optimum Receiver (Part 2)	11	650-668	11.6-6; 11.6-8; 11.6-11; 11.6-12
4/23	R, F	26	Texas Symposium on Wireless and Microwave Circuits and Systems			Complete conference assignment.
4/28	T	27	QUIZ 13, Equivalent Signal Sets, OFDM P8 DUE	11 13	668-676 793-803	11.8-1; 11.8-2; 11.8-4; 11.8-5 13.7-1; 13.7-2; 13.7-3
4/30	R	28	Review for Final Exam			
5/11	M		FINAL EXAM (2:00-4:00 p.m.)			