EE379B Lectures – Spring 2024

Tu-Th 9:00 - 10:20 am; Huang 18

Lecture #	Date	Topic	Reading	Hmwrk (out/in)
		Multi-User Communication		
		Dimensionality Fundamentals (Sections 1.3, 2.4, 4.1-4.7)		
1	4/2	Introduction and Dimensionality	1.3.4-7, 2.1-5, 4.1-3	1/-
2	4/4	Channel Partitioning: Vector Coding & DMT	2.5, 4.4-4.7	-/-
		Information Measures		
3	4/9	MMSE Estimation and Information Measures	1.5, D.1-2, 2.3, 4.1	2/1
4	4/11	Capacity, Separation Thm, & C-OFDM	2.5, 4.4	-/-
5	4/16	Adapting Modulation Coding Scheme	1.6, 2.5, 4.4	-/-
6	4/18	Wireless Space-Time Examples	4.6, 4.7	3/2
		Multi-User Fundamentals		
7	4/23	Multi-User Channels and the Capacity Region	2.6	-/-
8	4/25	Multiple Access Channels	2.7	4/3
9	4/30	Broadcast Channels	2.8	-/-
--	5/2	**Midterm Exam** (open bk) hmwk, 9 **am Tues**		-/4
10	5/7	Broadcast Channels continued	2.8	5/-
11	5/9	Interference and Other MU Channels	2.9-11	-/-
		GDFE Foundation		
12	5/14	GDFE Basics	5.1-3	6/5
13	5/16	GDFE Input Optimization and Forms	5.3	-/-
		Resource Allocation		
14	5/21	MAC GDFEs and Design Measures	5.4	7/5
15	5/23	MAC design by weighted sums	5.4	-/-
16	5/28	BC Duality and MAC-dual Basis	5.5	-/-
17	5/30	BC Design and the Central IC	5.5	-/7
18	6/4	LIC Design & Machine-Learn Challenges	5.6	-/7opt
	6/10	**FINAL exam TBD**		

Grading: midterm 30%, final project 30%, homework (PS1-6 are 4% each; PS7 is 16%) 40% Final exam. please see https://oae.stanford.edu/faculty-staff/syllabus-statement .