

BME 687 – CLASS SCHEDULE – Spring 2008

Date	Week	Lecture Topic	Laboratory Topic
1/23	1	Introduction to the Course Basic Sensors and Working Principles (Chapter 2)	Studio #0 Electronic Components, Lab Instruments and Standards: A Practical Review
1/30	2	Basic Sensors and Working Principles (Cont.)	Studio #0 Experimenting with Various Sensors
2/6	3	A/D and D/A Converters	Demo: Data Acquisition with LabVIEW and Signal Processing in Matlab Demonstration of Quantum Noise
2/13	4	Basic Amplifiers and Filters	Studio#1 Pressure Amplifier
2/20	5	AC Characteristics of Amplifiers (Chapter 3)	Studio #2 Instrumentation Amplifier, Differential and Common Mode signals, CMRR measurements
2/27	6	Signal Contamination in Biopotential Amplifiers (Chapter 6)	Studio#2 (Cont.) Instrumentation Amplifier: Balancing the inputs for minimizing signal contamination
3/5	7	Noise in Biopotential Amplifiers: Thermal and electronic noise, Noise matching	Studio#3 Spike-Triggered Averaging as a Method of Noise Reduction
3/12	8	Midterm Exam	
3/19	9	Spring Recess	
3/26	10	Biopotential Electrodes: Electrical model (Chapter 5)	Studio #4 Transfer function of an Electrode
4/2	11	Biopotential Electrodes: Electrode Materials, charge injection capacity, etc.	Studio #4 (Cont.) Charge Injection Capacity of an Electrode
4/9	12	Origin of Biopotentials : Resting and Action Potentials in a Neuron (Chapter 4)	Studio #5 Electrocardiogram (filtering in Matlab)
4/16	13	Origin of Biopotentials (ECG, EEG, ENG, EMG, EOG)	Studio #5 (Cont.) Electrooculogram
4/23	14	No Lecture	Term Project Design
4/30	15	Term Project Presentations	

Final Exam is as scheduled by the University.