

## BENG402 – Bioinstrumentation by design Lab

Wk	Day	Theme	Detail	Hw	
1	Aug 28	Labview1/2	Introduction to LV programming, LabView tutorials, loops, if-then-else, controlling charts and graphs.	HW1 (VI)	NP
2	Sept 4	Labview 2/2	How to measure physiological signals, chemical training, lab etiquette, lab access. Data acquisition, signal processing, file saving, building applications.	HW2 (VI)	NP
3	Sept 11	Genetic circuits	Introduction to gene networks and synthetic biology		SH
4	Sept 18	Modeling	Modeling gene networks I	HW3	SH
5	Sept 25	Modeling	Modeling gene networks II		SH
6	Oct 2	Wet lab I	Manipulating DNA to build gene networks: using PCR and enzymatic digestion		SH
7	Oct 9	Wet lab II	Running gel electrophoresis		SH
8	Oct 16		Data analysis (Matlab)		NP
9	Oct 23	Piano Glove	Pressure sensors, accelerometers, building the glove and testing the system.	HW4 (design)	NP
10	Oct 30	Instrumentation	Amplifiers, preamps, bias current, electric isolation	HW5 (test)	NP
11	Nov 6	PCBs 1/2	Design and make a printed circuit board.		NP
12	Nov 13	PCB 2/2	Testing a PCB, acquiring data. (EKG / EMG / EEG). Overview of FDA rules.		NP
13	Nov 20		Data analysis (Matlab)		NP
14	Nov 27	Txgiving	Recess.	No class.	
15	Dec 4		Genetically modified plants – how to detect and analyze.		NP/SH
16	Dec 11	Exam	Final		NP