CS489/698 "Computer Sound".   Jan 3, 2016

All Notes, including these handwritten ones, will be available on Piazza.
https://piazza.com/class/ij7fp4kuvngix

Please note: Messages you post to Piazza remain public. Your name is removed but messages remain.

Also, previous courses are archived, so my course from last year (W16) is available at,

Grade: 50% Project (*)   50% homework (measure/program)
<u>Project based</u>: your own choice, or topics developed during term
Communicate all via Piazza
Survey class
- ·
- · outside CS   Engineering, Physics?
- · Play instrument/sing
- · Record or process audio
- · do live sound/mix
- · DJ
  Group 6 Ugrad: 35
* Some of you are interested, looking for topic

Grading: 50% Coursework, 50% Final project. No exam.
   (** CS689 will be 60% project **)

Course Objective:

Individual or group project involving sound/ music/ audio.
Present projects to the class and provide a final report.

Lectures cover practical and theoretical aspects of audio.

Coursework is a series "homework exercises.
Simple experiments and measurements (on your own sound
system) and a small amount of programming.

Project Ideas:

1. Students' own ideas,
- recording your signing voice
- model a guitar effect pedal

2. System measurement
- electronics, speakers, room acoustics, etc.

3. Open source HW/Software
* Friture open source analyzer
- plug ins Linux Ardour
- media station internet audio over IP on Raspberry Pi
- audio effects processing (Teesny Arduino ARM)

Course Schedule
(see Piazza)

Note:
PO: Project proposal

P1: Project progress report

Pfinal @ EOT

"Homework" (Assignments)

A0. System Setup

10%. A1 Measure your own sound system (ADC/DAC, test signal)

10%. 2

. 3

. 4

10% 5

? } Build a vocoder

Last ideas conserve as project topics.

AUDIO SYSTEM

Sound Interface (ADC/DAC/Preamp):
   ART USB DUALPRE   ~$65 @ Long
                                    McQuade

1. PC (x86) Linux Ubuntu 16.04 LTS   `LOAN from CSCF`

2. Rasyberry Pi (ARM) Linux "Raspian"

PART 2

DEMO 1: speaker and tones

DEMO 2:
    Recording
    "Audacity" available under
              Linux/Win/Mac

DEMO 3
    Ardour Linux
      DAW

DEMO 4
    Friture Realtime analyzer