Music 158

Sound and Music Computing with CNMAT Technologies

Course Syllabus Fall 2015

Instructor Information

Section 001:

- MTh 09:30am - 11:00am
- (Lab) F 010:00am - 11:00am
- Ilya Rostovtsev
- ilyaforpresident@berkeley.edu

Section 002:

- MTh 11:00am - 12:30pm
- (Lab) F 010:00am - 11:00am
- Prof. Rama Gottfried
- rama.gottfried@berkeley.edu

Lab Attendance: You are required to complete the lab assignments. You may attend the lab during the open walk-in hours throughout the week in addition to the scheduled lab hours. Please see *Attendance* and *Late Work* for more information.

Office Hours: We will be regularly present during the scheduled lab hours on Fridays. Instructors will alternate every other week.

Course Description

This course is about digital sound. Specifically, it is about music created with digital sounds. As we explore music with a computational frame of mind, we will approach each topic with explicit expectations of artistic and musical applications. Topics in psychoacoustics, music perception and cognition will be introduced to facilitate our understanding of digital manipulations and their role in the shaping of the musical experience.

Goals: Gain proficiency in Max/MSP programming environment. Learn basic concepts and techniques of computer-based music, composition, and performance. Included will be the exposure to the essentials of digital audio signal processing, musical acoustics and psychoacoustics, sound analysis and synthesis, and use of Open Sound Control (OSC).

Materials

We will be using Max/MSP extensively in the course. Arduino Esplora controller will be used as an input device this semester. Controllers are not available outside the lab, yet may be checked out during lab hours. See your instructor for more information if you have questions.

The computer lab is equipped with licenses of Max available for your use, however it is possible to have a copy of the latest version of Max installed on your laptop and/or home system. We highly recommend purchasing a Max subscription for the semester from Cycling 74 https://auth.cycling74.com/purchase ($9.99 a month). We will be making an extensive use of UC Berkeley's own set of Max Externals, which may be downloaded online.

A wealth of CNMAT resources may also be found in the *MMJ Depot*.

Required: USB flash drive with at least 200MB of free space.

Recommended: Your own set of headphones.

Schedule

Weekly schedule is subject to change, please watch bCourses for important announcements.

Date			Topic
Aug.	M	24	NO CLASS
	Th	27	Introduction, course overview, Hello Max
	F	28	NO LAB
	M	31	Introduction to Dataflow in Max
Sept.	Th	03	Introduction to Dataflow in Max
	F	04	Lab 1
	M	07	NO CLASS -- Academic & Administrative Holiday
	Th	10	Digital Audio Primer (+ Quiz 1)
	F	11	Lab 2
	M	14	**odot** and control structures (+ Quiz 2)
	Th	17	**odot** and control structures
	F	18	Lab 3
	M	21	Interacting with Hardware (+ Quiz 3)
	Th	24	Interacting with Hardware
	F	25	Lab 4
	M	29	Elements of Audio Synthesis (+ Quiz 4)

Oct.	Th	01	Elements of Audio Synthesis
	F	02	Lab 5
	M	05	Composing Digital Instruments (+ Quiz 5)
	Th	08	Composing Digital Instruments
	F	09	Lab 6
	M	12	**Midterm Projects**
	Th	15	**Midterm Projects**
	F	16	Lab 7 (Midterm Project)
	M	19	Timing & Scheduling
	Th	22	Timing & Scheduling
	F	23	Lab 8
	M	26	Special Topics -- TBD
	Th	29	Special Topics -- TBD
	F	30	Lab 9
Nov.	M	02	Special Topics -- TBD
	Th	05	Special Topics -- TBD
	F	06	Lab 10
	M	09	Spectral Synthesis
	Th	12	Spectral Synthesis

	F	13	Lab 11 (Final Project Proposals Due)
	M	16	Special Topics -- TBD
	Th	19	Special Topics -- TBD
	F	20	Final Project Proposals Finalized
	M	23	Special Topics -- WRAP UP
	Th	26	NO CLASS
	F	27	NO CLASS
	M	30	**Final Projects**
Dec.	Th	03	**Final Projects**
	F	04	Lab 12 (Final Projects) -- formal classes end
	F	18	**FINAL PROJECT VIDEOS AND DOCUMENTATION DUE**

We will announce our availability for the reading week as time draws nearer.

Policies

Grading

Graded assignments have the following weight:

Graded Work	%-Value
Final Project	30%
Midterm Project	15%
Lab Assignments	35%
Quizzes	20%

The grade distribution is:

Percent	***Grade***
100% -- 90%	A
89% -- 89%	B
79% -- 70%	C
69% -- 60%	D
59% -- 0%	F

Plusses are awarded for the top three percent and minuses are reserved for the bottom three percent of each grade distribution above. Opportunities for extra-credit will be announced during class hours.

Important Dates

- Deadline to drop without a fee: **September 4th**
- Deadline to add without a fee: **September 11th**
- Deadline to add without Dean's approval: **September 25th**
- Deadline to drop without notation on transcript: **September 25th**
- Deadline to change grading option: **October 30th** (Dean's exception required after this date)
- **November 20th** (Friday) is scheduled for individual meetings for everyone to discuss their final projects - we will start scheduling these as early as

possible. Please notify us of any conflicts on that day.

Attendance

- We require attendance during Monday / Thursday lecture hours.
- We require each and every lab assignment to be completed by the end of each week (that is, **Sunday, 11:59pm** and not a minute later) - you are free to work using your own computers, but we are unable to provide support for installation of Max and externals due to high enrollment numbers.
- We can not allow students to attend the other section this semester due to the fact that both sections are full.

Late Work

If you are missing class due to a university function, please inform your instructor as soon as possible and provide the paperwork as early as you can so as to expedite our scheduling of individual appointments and make-up work.

Our policy expects regular attendance:

- all quizzes are to be completed in-class and turned in via bSpace, we will not provide opportunities for make-up work.
- labs will be assigned most weeks, and will be announced each Monday - your work must be submitted via bSpace by the following **SUNDAY**, by **11:59pm**.
- late labs are penalized by a full letter grade (10% of assignment's total value) for each day they are late.
- final projects replace the final exam and therefore may not be late (failure to deliver the work by the scheduled final exam date will result in a zero grade for the final, which will most certainly result in a failing grade for the course).

Academic Integrity

Copying all or part of another person's work, or using reference material not specifically allowed, are forms of cheating and will not be tolerated.

Specifically:

- Any work submitted should be your own individual thoughts, and should not have been submitted for credit in another course unless you have prior written permission to re-use it in this course from this instructor.
- Do not collaborate or work with other students on assignments or projects unless you have been given permission or instruction to do so.
- If you are unclear about expectations, ask your instructor or GSI.

Accommodation

If you have been issued a letter of accommodation from the Disabled Students Program (DSP), please see me as soon as possible to work out the necessary arrangements. If you need an accommodation and have not yet seen a Disability Specialist at the DSP, please do so as soon as possible.

If you would need any assistance in the event of an emergency evacuation of the building, the DSP recommends that you make a plan for this in advance. (Contact the DSP access specialist at 510-643-6456.)

Discussion

We welcome all pertinent discussion and are counting on your participation in the course. We ask that your rhetoric deals with statements and ideas rather than with speakers and persons. Verbal attacks towards your peers will not be tolerated.