Music M158A (sec 002)

Sound and Music Computing with CNMAT Technologies
Syllabus 2021 Summer

Zoom ID / Time

Zoom ID: **668 409 0388** <—— **SAVE IT!**
Mon / Wed / Fri: 1:10 - 3:30 pm PST
We are a musical **community. Cameras on!**

Synchrony required.

Office Hours: announced on bcourses weekly, influenced by you!

Instructor Information

Jon Kulpa (just call me Jon, not Professor Kulpa…Jon without an H, even when you pronounce it!)
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Course website and materials:

https://bcourses.berkeley.edu/courses/1506566/files
Recorded Zoom classes posted in our bcourses Media Gallery

Course Description

Music 158A explores the intersection of music and computers using a combination of scientific, technological, and artistic methods. Musical concerns within a computational frame are addressed through the acquisition of basic programming skills for the creation and control of digital sound.

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 and synthesis, software tools created by the Center for New Music and Audio Technologies (CNMAT), and use of Open Sound Control (OSC) and the language odot. You must code everything along the way, or you won't gain the proficiency to build your own tools and make your own music. Comprehension isn't enough. You must learn to "speak" these computer languages for yourself.

Begin to gain an appreciation for and engage with the cyclical process of building and listening to the fruits of your labor (repeat this process until something wonderful **emerges**).

You 1) start with an intuition about what kind of sound you want to make. Then you 2) attempt to build the tool / code / engine that makes that happen (in computer music, we don't only use tools, we build them - as you learn Max, etc, you will gain the skills to do so). Then you 3) listen to what your engine does and form intuitions as a musician with a good set of ears! Does it match your initial intuition? Does it matter? Did you discover something that is **emerging**, but not yet complete? Maybe it needs to be tweaked based on your musical intuitions. Guess what! Then you 4) repeat the entire process….based on your musical engines, you build more (tweak the code/engine), listen more, build more, listen more. Eventually something stunning can emerge from this cyclical process.

Curiosity, open-mindedness, and hard work:

I support any sounds in this course you decide to obsess with and work hard at. I like to teach because I learn from having to distill concepts to their essence and because I can learn from your ideas. That being said, I am not personally a composer interested in making beats or teaching principles of pristine audio engineering per se…I love all sound, including beats and audio engineering principles are important. However, my personal interests tend to congregate more around some experimental sounds you might find "weird" at first. Not because I am out of my mind (well possibly, but…); rather because I love invention and discovering new forms of beauty and sonic possibility. This course absolutely aims to stretch your mind and introduce you to new ideas about music and sound. Again, I am also very open to your goals, any sound you are interested in. If you show a desire to grow and stretch your mind, that motivates me to do the same. We can both inform what emerging computer music is.

Assignments and Grading Policies

Overview:

Graded assignments have the following weight:

- 10% Zoom Attendance (rigorously observed on Zoom reports!)
  - Allowed one class absence without effect on this grade
  - Only 1 hr does not count for attendance (conflicts must be communicated ahead of time)
  - Mandatory attendance for first two weeks, or your enrollment spot may be given instead to someone on wait-list who is present and trying to make it into the course
- 60% Lab Assignments (*spread over 2 lab assignments*)
- 30% Final Project

Labs

- Labs are due at 11:59 pm on the due date posted on the class bCourses site.
- Place all materials (patches, samples, dependencies) ***in a folder with your name on it***.
  - e.g. "jon_kulpa"…not just "lab2"
- Zip and upload to bcourses
- Extensions require:
  - Approval! That is, actively communicate with me.
  - Late labs must be emailed to me (do not submit on bcourses).

- Grading:
  - This course is at the intersection of composing and designing. Labs are deliberately quite open-ended, so that students can explore, invent, and be creative. Requirements are indicated on each lab, and must be fulfilled, but otherwise, students are free to be as creative as they wish. You aren't told precisely what to make!
  - **Grading is a combination of: 1) fulfilling the posted requirements 2) *effort and creativity* 3) initialized, de-bugged, without egregious coding errors**

10 - 9.6	- greatly exceeds homework requirements and is exceptionally creative, *and goes beyond any class-provided models (not copy/pasted)*
9.5 - 9.0	- meets homework requirements, is well-developed, *and goes reasonably beyond any class-provided models (not copy/pasted)*
8.9 - 8.5	- meets the demands of the assignment and displays effort
8.4 - 8.0	- falls short of the assignment requirements but displays a good effort
7.9 - etc	- displays a lack of effort and understanding of the materials involved

Final grade distribution:

100 - 99%	A+
98 - 94	A
93 - 90	A-
89 - 87	B+
86 - 83	B
82 - 80	B-
79 - 77	C+
76 - 73	C
72 - 70	C-
etc	

P/NP - As with any UC Berkeley course, a passing grade is C- or better.

Course “Schedule"

…in quotes because ***much like computer music itself, this course is emerging and evolving as we go along.***

	Date			Goings-On
Week 1	July	Wed	7	Syllabus, Installation Intro to Max
		Fri	9	Intro to Max Intro to MSP
Week 2		Mon	12	Intro to MSP Time…Basic Automation
		Wed	14	Time…Basic Automation **Lab 1 - Automation** ***build, build, build***
		Fri	16	Subtractive Synthesis (filters) Intro to odot / o.io (controllers)
Week 3		Mon	19	Timbre Additive Synthesis / poly~
		Wed	21	Additive Synthesis / poly~
		Fri	23	Additive Synthesis / poly~ Sound Mass / algorithmic-autonomous voices
Week 4		Mon	26	Delays
		Wed	28	Modulation Synthesis **Lab 2 - Additive, Subtractive, Delays, Modulation** ***build, build, build***
		Fri	30	Granular Synthesis
Week 5	August	Mon	2	Granular Synthesis Time…Sample Accurate clocks and step sequencers
		Wed	4	Time…Sample Accurate clocks and step sequencers Time…Rhythm (subdivisions / polyrhythms)
		Fri	6	Time…Rhythm (subdivisions / polyrhythms) Work on Final Projects
Week 6		Mon	9	Work on Final Projects

		Wed	11	Work on Final Projects
		Fri	13	**Final Prez - Zoom Concert (due at beginning of class)**

First Day: Installation Instructions

1) Go to https://cycling74.com/downloads
   - Create an account.
   - Download and install Max 8

2) Authorize Max:
   - 30 days free for those who have never used it
   - Then $9.99 per month ($10-30 for semester).
   - https://cycling74.com/shop
   - Authorize by going to Max, then Help >> User Account and Licenses (then sign in and authorize).

3) Go to https://berkeley.box.com/s/squzzgwhtkz4x1k3hd6emdn88h63vodb
   - Download the entire CNMAT-Everything folder ("Download" button is in the upper right).
   - Unzip if it's zipped.

   - Go into the /CNMAT-Everything/Packages folder.
     You want to take *all the content inside that* Packages folder and drag it here on your computer:
     Documents >> Max 8 >> Packages

   - Place the /CNMAT-Everything/max_enabled folder anywhere on your system.
     e.g.'s: /Desktop/max_enabled
     /Documents/max_enabled
     NOTE: however, don't put it in Documents >> Max 8 >> Packages

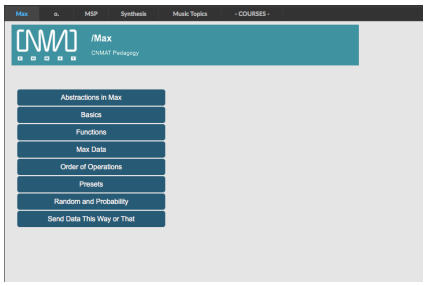
4) Tell Max where you placed max_enabled
   - While in Max, go to:
     Options >> File Preferences

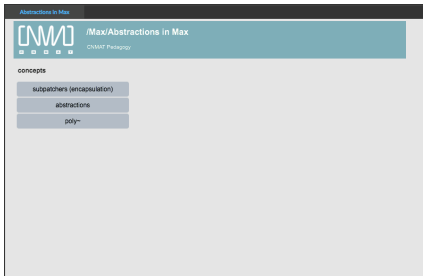
     Click the **+** in the lower left corner (a new file pathway gets added).
     Select "choose" on the new pathway.
     Point at the max_enabled folder, wherever you placed it.

5) Test:

   - *Quit and restart Max*.
   - All the materials of the course are accessed via one max patch:
   - While in Max, go to:
     Extras >> **CNMAT-Pedagogy_overview**

   - It should look like this. Try clicking on a blueberry colored button.
   - Make sure a blueberry button opens up another window like this.
   - Finally, click on a gray button and make sure it opens
     yet another window that looks like a little lesson.





Each Class

***Get the Latest* CNMAT-Pedagogy**

At the beginning of every class, before starting Max, go to the bcourses site Files folder, and download the latest CNMAT-Pedagogy:

Go to Documents>> Max 8 >> Packages and place CNMAT-Pedagogy.zip inside.
DELETE your old CNMAT-Pedagogy.zip folder. Don't be afraid. Just don't take notes on these!
Unzip the new CNMAT-Pedagogy.zip.

Other Policies

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.

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. When working with your peers in class, let's emphasize constructive dialogue and avoid language that could be construed as a verbal attack.

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Federal copyright laws protect all original works of authorship fixed in a tangible medium. When using material that has been written, recorded, or designed by someone else, it is important to make sure that you are not violating copyright law by improperly using someone else's intellectual property.

The Department of Music is committed to upholding copyright law. As a student enrolled in this music class, you may be provided with access to copyrighted music which is directly related to the content of this course. It is our expectation that you will utilize these digital recordings during the course of the semester that you are enrolled in this class, and will delete these recordings after the close of the course. The purpose and character under which these recordings are being provided to you is for nonprofit educational purposes only.

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